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THE SPECIES OF *XANTHONIA* BALY 1863 (COLEOPTERA: CHRYSOMELIDAE: EUMOLPINAE) IN NORTH AMERICA EAST OF THE MISSISSIPPI RIVER

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Abstract.—The genus *Xanthonia* Baly is revised for eastern North America, with nine species. The species *X. decemnotata* (Say) and *X. villosula* (Melsheimer) are redescribed; *X. stevensi* Baly is removed from synonymy with *X. villosula.* Neotypes are designated for *X. decemnotata, X. stevensi,* and *X. villosula.* The new species ***X. angulata*** from Maryland to Kansas, ***X. furcata*** from Illinois and Missouri, ***X. intermedia*** from Alabama and Iowa, ***X. monticola*** from the mountains of New York and North Carolina, ***X. serrata*** from Massachusetts to Louisiana, and ***X. striata*** from Massachusetts to Texas are described and a key to the species is presented.

Key Words: Coleoptera, Chrysomelidae, Eumolpinae, *Xanthonia,* new species

The genus *Xanthonia* was erected by Baly (1863) for the new species *stevensi* from Canada. Baly (1874) described *placida* from Japan. Horn (1892) transferred *Colaspis decemnotata* Say, *Eumolpus villosulus* Melsheimer, and *Tricotheca vagans* LeConte to *Xanthonia* and synonymized *X. stevensi* and *Myochrous plagiata* Melsheimer with *X. villosula.* Jacoby (1882) described *guatemalensis, nigrofasciata,* and *plagiata* from Guatemala, *marmorata* from Mexico and Panama, and *tuberosa* from Mexico. Clavareau (1914) renamed *plagiata* Jacoby *jacobyi* because the name was preoccupied by *plagiata* Melsheimer. Schaeffer (1933) described *pinicola* from Arizona. Chen (1935) described *signata* and *sinica* from China. Chen (1940) described *collaris* and *varipennis* from China and transferred *minuta* Pic from *Aoria.* Blake (1954) described *flavoannulata* from Mexico. Bechyné (1955) described *umbilicata* from Mexico. Kimoto and Gressitt (1982) described *morimotoi* from Thailand and synonymized *Microlypesthes* Pic with *Xanthonia* which moved *coomani* Pic into *Xanthonia.* Takizawa (1987) described *fulva* and *nepalensis* from Nepal. Takizawa and Basu (1987) described *oblonga* from India.

The entire genus has never been revised. Horn (1892) presented a key to three North American species. Gressitt and Kimoto (1961) presented a key to five species from China. Kimoto and Gressitt (1982) presented a key to three species from southeast Asia.

This project was begun as a Master of Science thesis by Weisman (1960). The material was brought to the Systematic Entomology Laboratory, USDA, when Weisman accepted a position there. Due to a number of factors Weisman never completed the revision and the material remained in the collection until I became interested in the group. This work is based on Weisman's unpublished thesis with additional material identified by myself. Also the nomenclature is updated to fulfill the requirements of the current Code (ICZN 1999).

There is little published biological information on the genus. Adults of Nearctic species have been collected in association with a wide variety of plants but the actual larval host plant has not been determined for any species. Due to the number of new species, the reported plant associations are of questionable value. Packard (1890) reported *X. stevensi* from *Carya* (Juglandaceae). Hamilton (1895) and Felt (1906) reported *X. decemnotata* on *Quercus* (Fagaceae); Chagnon (1937) reported it from *Quercus* and *Fagus*; Blatchley (1910), Craighead (1950), and Wilcox (1954) reported it from *Quercus, Fagus,* and *Ulmus* (Ulmaceae); Phipps (1926) reported it from *Malus, Rubus* (Roseaceae), and *Tilia* (Tilaceae); Wilcox (1979) reported it from *Fagus grandifolia* Ehrh., *Hamamelis* sp. (Hamamelidaceae), and *Ulmus* sp.; Dearborn and Donahue (1993) reported it from *Abies* sp. (Pinaceae), *Betula* sp. catkins (Betulaceae), *Picea* sp., and *Tsuga* sp. (Pinaceae). Stauffer (1865) reported *X. villosula* damaging *Vitis* (Vitaceae); Douglass (1929), Chagnon (1937), and Wilcox (1954) reported it from *Quercus*; Hamilton (1895) and Blatchley (1910) reported it from *Quercus* and *Corylus* (Betulaceae); Wellhouse (1922) reported it from *Crataegus* (Roseaceae); Blatchley (1924) reported it from *Myrica* (Myrtaceae); Felt (1906) reported it from *Quercus, Carya, Corylus,* and *Populus* (Salicaceae); Wellhouse (1919) reported feeding on *Carya ovata* (Mill.) K. Koch, *Crataegus punctata* Jacq., *Tilia americana* L., *Quercus alba* L, *Vitis riparia* Michx., *Rubus* sp., *Rosa* sp., *Carpinus caroliniana* Walt., *Ostrya virginiana* (Mill.) K. Koch (Betulaceae), *Acer saccharum* Marsh (Aceraceae), *Hamamelis virginiana* L., *Waldstenia fragarioides* (Michx.) Trattinick, and *Fragaria virginiana* Duch. (Roseaceae). Schaeffer (1933) reported *X. pinicola* beaten from *Pinus*. Blake (1954) noted that *X. flavoannulata* was associated with various Orchidaceae in Mexico. Moldenke (1971) reported *X. tuberosa* associated with *Quercus purulbana* Trel. Gressitt and Kimoto (1961) mentioned that *X. signata* was associated with *Viburnum* spp. (Caprifoliaceae). Wellhouse (1919) described the eggs of *X. villosula* and found that they were laid in masses in moist earth just below the surface of the soil. Phipps (1926) found that adult *X. decemnotata* fed actively at night but hid in rolled leaves during the day. Riley and Enns (1979) reported taking *X. decemnotata* and *X. villosula* at light. Lee (1993) obtained larvae of *X. placida* by rearing adults on leaves of *Morus bombycis* Koidz. (Moraceae).

For this study, measurements were taken with an ocular micrometer. Total length was measured from the base of the antennae to the apex of the elytra. In recording label data from type specimens, a slash (/) divides data on different labels. Specimen depository is noted in parentheses, and acronyms are given in Acknowledgments. Brackets ([]) contain explanatory notes.

Xanthonia Baly

Xanthonia Baly 1863: 151 [Type species: *Xanthonia stevensi* Baly (by monotypy)]. Crotch 1873a: 96; Chapuis 1874: 273; Jacoby 1882: 164; LeConte and Horn 1883: 343; Lefèvre 1885: 74; Horn 1892: 199; Wickham 1896: 172; Blatchley 1910: 1142; Clavareau 1914: 75; Chen 1935: 359; Chagnon 1937: 250; Chen 1940: 491; Bechyné 1950: 288; Monrós 1952: 189; Bechyné 1953: 248; Wilcox 1954: 401; Chûjô 1956: 108; Seeno and Wilcox 1982: 61; Flowers 1996: 52.

Microlypesthes Pic 1936: 15. Type species: *M. coomani* Pic (by monotypy). [Synonymized by Kimoto and Gressitt 1982].

Body oblong, subcylindrical; covered with fine pubescence or scales.

Head: Exserted, rounded, perpendicular;

covered with coarse punctures; eyes rounded, entire, convex; front usually with impressed medial line; mentum with anterior margin concave; labrum slightly emarginate; last segment of maxillary palpus ovate-acuminate.

Antenna: Half body length; slender, filiform; segment I incrassate; II thickened, oval, shorter than I; III and VI subequal in length, slender, each longer than I; VII to XI slightly shorter than III, slightly thickened; XI oval, short.

Pronotum: Subcylindrical, transverse, widest point behind middle; slightly flattened; lateral margins obsolete; sides broadly rounded; longitudinal sulcus present behind anterior margin; large impression present at middle of each side; surface covered with coarse punctures with a seta arising from each puncture; pubescence varying from long silky to short recumbent.

Scutellum: Trapezoidal.

Elytra: Wider than base of pronotum; humeri prominent and with an obscure to prominent callosity at middle of base and an interhumeral sulcus present between the callosity and humerus; surface slightly depressed adjacent to scutellum; lateral margins parallel; surface densely punctured, arrangement varying from completely confused to regularly seriate on disc, punctures always confused near scutellum; intervals completely flat or tending to become costate especially at sides and apex; pubescence with setae arising both in punctures and on intervals, setae always appressed and varying in length from short and inconspicuous to the same length as the interval setae; interval setae usually uniseriate on each interval but denser in some species, varying from erect to strongly inclined; apices broadly rounded.

Venter: Prosternum oblong-elongate, narrow or straight, convex between coxae, depressed before and behind, anterior margin continuous with episternum; mesosternum oblong; metasternum with parapleura linear, obtuse at apex, with coarse punctures at sides; abdomen with coarse punctures on first and fifth segments, each segment with shallow impression at each side near margin; lateral margins usually entire but sterna 3 to 5 may be irregularly notched or serrate in some species; last sternite of male occasionally with tubercle on each side of middle.

Legs: Femora slightly thickened, profemur usually with ventral tooth, meso- and metafemora with ventral tooth present; tibiae simple; tarsi with segment 1 shorter than 2 or 3; claws bifid, inner tooth incurved, shorter.

Notes.—In North America, *Xanthonia* can be distinguished from all other Eumolpinae by the following combination of characters: anterior margin of pronotum straight beneath, not forming ocular lobes; pronotum without distinct lateral margins; body dorsally without metallic colors; head without supra-orbital groove; eyes rounded (not emarginate); antennal segment three not longer than two; pronotum transverse; and body covered with scales or dense pubescence.

The genus most similar to *Xanthonia* is *Fidia* Walsh 1867. *Fidia* differs by having a cylindrical pronotum and antennal segment three longer than two.

KEY TO THE *XANTHONIA* OF NORTH AMERICA EAST OF THE MISSISSIPPI RIVER

1. Elytral punctures confused on disc, tending to form rows only at suture and along lateral margins 2
– Elytral punctures in rows on disc, punctures are confused near scutellum, behind sulcus and below humerus 3
2. Abdomen with lateral margins of segments 4 and 5 serrate (Fig. 8); male genitalia as in Fig. 13c; Massachusetts to Louisiana . . . . *serrata,* new species
– Abdomen with lateral margins of all segments entire (Fig. 3); male genitalia as in Fig. 12b; Nova Scotia to South Carolina, west to Louisiana and Montana . . . . *decemnotata* (Say)
3. Abdomen with lateral margins of some segments notched or serrate 4
– Abdomen with lateral margins of all segments entire 5
4. Pronotum widest at middle; elytral punctures smaller than width of an interval; male geni-

talia as in Fig. 15b; Ontario to South Carolina, west to Texas and Yukon *villosula* (Melsheimer)
– Pronotum widest behind middle; elytral punctures as wide or wider than the width of an interval; male genitalia as in Fig. 13a; Alabama, Iowa . . . . *intermedia*, new species
5. Pronotum widest at middle, rounded 6
– Pronotum widest behind middle, angulate . . . 7
6. Punctures on head and pronotum very coarse (Fig. 6); male genitalia as in Fig. 13b; mountains from New York to North Carolina . . . . *monticola*, new species
– Punctures on head and pronotum moderately coarse (Fig. 9); male genitalia as in Fig. 14; Quebec to North Carolina and Nebraska . . . . *stevensi* Baly
7. Elytra with long setae in single lines on every other interval and in each puncture; male genitalia as in Fig. 12c; Illinois and Missouri . . . . *furcata*, new species
– Elytra with long setae on each interval, setae in punctures inconspicuous 8
8. Pronotum with lateral margins slightly rounded and converging apically; male genitalia as in Fig. 15a; Massachusetts to Texas . . . . *striata*, new species
– Pronotum with lateral margins almost straight and converging apically; male genitalia as in Fig. 12a; Maryland to Kansas . . . . *angulata*, new species

Xanthonia angulata Staines and Weisman, new species

(Figs. 1, 12a)

Holotype.—♂, Glen Echo, VI-28–30, Md/J. C. Bridwell coll./Holotype Xanthonia angulata Staines and Weisman [red label] (USNM).

Allotype.—♀, Glen Echo Md/JCBridwell coll. VII-14-30/Allotype Xanthonia angulata Staines and Weiseman [red label] (USNM).

Paratypes.—19, each with Paratype Xanthonia angulata Staines and Weisman [red label]: 1 ♂: Glen Echo, 23-6-29 Md/Bridwell Collector (USNM); 1 ♂: Glen Echo Md summer 1922, J. C. Bridwell (USNM); 1 ♂: Glen Echo, VI-28-30 Md/JCBridwell coll. (USNM); 1 ♂: Montg. Co. Md, VI-15-1909/Ernest Shoemaker Collection (USNM); 1 ♂, 3 ♀: Washgton DC (USNM); 1 ♀: Rock Creek, July 13, 1902, Washington DC (USNM); 1 ♂: Mt. Vernon Va, VI-20-20/Ernest Shoemaker Collection (USNM); 1 ♀: Gt. Falls Va, VI-14-13 (USNM); 2 ♂: Knoxville, Tenn/G. M. Bentley Coll./June 12, 1916/Quercus/99151 Hopk US (USNM); 1 ♀: C. Mo./June/Collection C. V. Riley (USNM); 1 ♀: C. Mo/collection C. V. Riley (USNM); 1 ♀: Eldon Mo., V-28-1939, E. O. Essig (SEMC); 1 ♂: Elk City, Kan., 4-2-36, Beamer and Sanderson (SEMC); 1 ♀: Ames, Iowa, 7-10-32, F. Andre (USNM); 1 ♀: Floyd Co., Ind., 6-23-06/6721/Collection F. Knab (USNM).

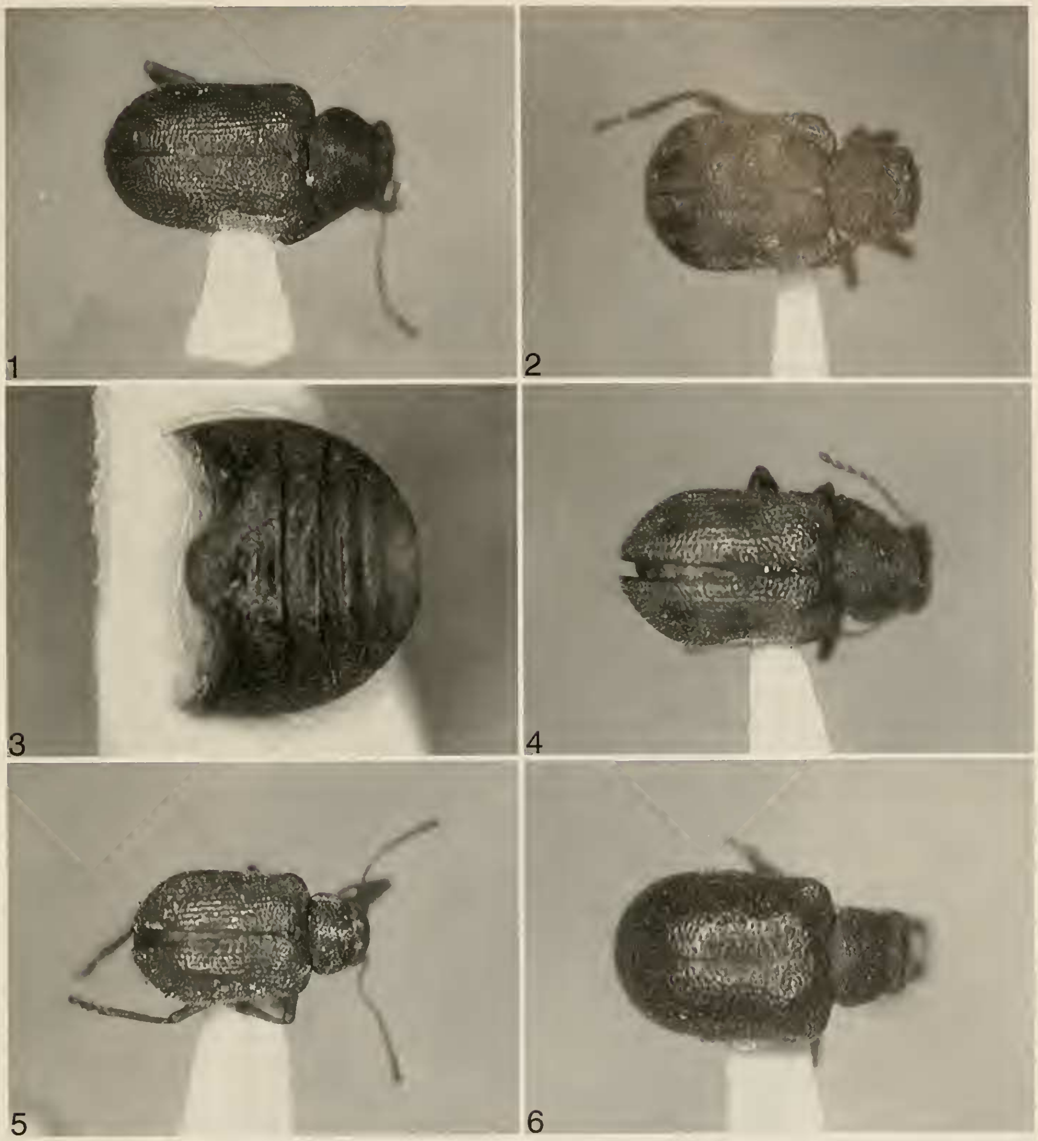
Description.—*Head:* Dark reddish brown; labrum and antenna yellowish brown; densely and coarsely punctate, with short golden appressed pubescence; front with medial line slightly impressed; interantennal area moderately concave to almost flat.

Pronotum: Dark reddish brown to fuscous, occasionally with lighter apical and basal margins; densely, coarsely punctate; with fine, dense golden pubescence; width 1.4 times its length; widest just behind middle; sides in dorsal aspect angulate behind middle, almost straight and converging apically, strongly rounded behind; anterior transverse depression and lateral impressions shallow to obscure.

Elytra: Reddish brown; length averaging 1.65 times width, 2.7 times length of pronotum; basal callosity evident; punctures in regular rows, confused only near scutellum, behind sulcus, and below humeri; punctures nearly as large as width of an interval on disc; intervals costate, especially laterally and at apex; pubescence composed of erect setae in single lines on intervals and very short, obscure setae in punctures.

Venter: Dark reddish brown to fuscous; metasternum with sparse moderately coarse punctures on lateral margin; abdomen without coarse punctures, with sparse fine punctures on last segment; all segments with lateral margins entire; last segment of male without large tubercles.

Legs: Yellowish brown; all femora with ventral tooth obsolete to absent. Male genitalia as in Figure 12a. Total length: 3.5 to 4.0 mm.



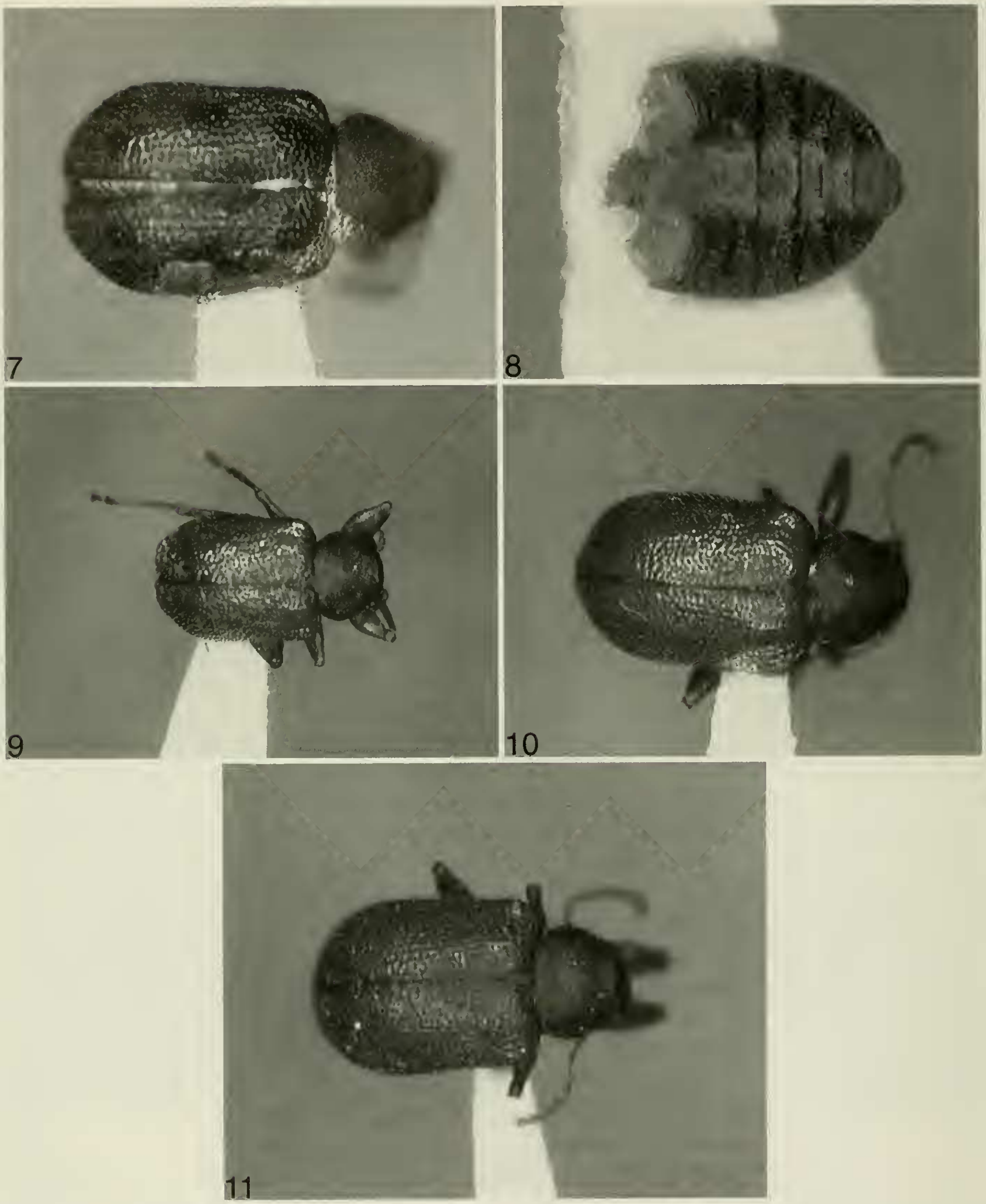
Figs. 1–6. *Xanthonia* species. 1, Dorsal view of *Xanthonia angulata*. 2, Dorsal view of *X. decmnotata*. 3, Abdomen of *X. demnotata*. 4, Dorsal view of *X. furcata*. 5, Dorsal view of *X. intermedia*. 6, Dorsal view of *X. monticola*.

Etymology.—From *angulatus* (Latin), with angles, for the angulate lateral margins of the pronotum.

Notes.—This species closely resembles *striata* but can be distinguished by the more shallow aedeagal emargination, by the divergent apices of the aedeagus, and by the more angulate pronotal lateral margins.

Plant associations.—Specimens have been collected from *Quercus*.

Distribution.—DISTRICT OF COLUMBIA. INDIANA: Floyd Co. IOWA: Story Co.: Ames. KANSAS: Montgomery Co.: Elk City. MARYLAND: Montgomery Co.: Glen Echo. MISSOURI: C. Mo.; Eldon. TENNESSEE: Knox Co.: Knoxville. VIR-



Figs. 7–11. *Xanthonia* species. 7, Dorsal view of *X. serrata.* 8, Abdomen of *X. serrata.* 9, Dorsal view of *X. stevensi.* 10, Dorsal view of *X. striata.* 11, Dorsal view of *X. villosula.*

GINIA: Fairfax Co.: Great Falls; Mount Vernon.

Xanthonia decemnotata (Say)
(Figs. 2, 3, 12b)

Colaspis decemnotata Say 1824: 445 [neotype ♂ (here designated): Plummers I., Md., Oct. 4 14/W L McAtee Collector/ Specimen No. 296/NEOTYPE Xanthonia decemnotata (Say) des. C. L. Staines 1999 (USNM)].

Pachnephorus decemnotata: Melsheimer 1853: 126.

Xanthonia decemnotata: Crotch 1873a: 96, 1873b: 34; Gemminger and Harold 1874: 3376; Henshaw 1874: 23; Hubbard and Schwarz 1878a: 640, 1878b: 660; Dury 1879: 172; Harrington 1884: 81; Lefèvre 1885: 74; Wickham 1888: 89; Horn 1892: 200; Osborn 1892: 34; Hamilton 1895: 340; Davis 1902: 37; Dury 1902: 165; Ulke 1902: 28; Wickham 1902: 286; Fall and Cockerell 1907: 196; Easton 1909: 53; Blatchley 1910: 1142; Wickham 1911: 31; Clavareau 1914: 75; Johnson 1915: 316; Chagnon 1917: 240; Leng 1920: 292; Schaeffer 1928: 467; Douglass 1929: 11; Johnson 1930: 62; Brimley 1938: 224; Johnson 1941: 99; Hughes 1944: 133; Löding 1945: 129; Fattig 1948: 19; Wilcox 1954: 401; Dillon and Dillon 1961: 680; Kirk 1969: 92, 1970: 88; Balsbaugh and Hayes 1972: 72; Rouse and Medvedev 1972: 79; Kirk and Balsbaugh 1975: 108; Wilcox 1975: 57; Riley and Enns 1979: 65; Wilcox 1979: 12, 19, 24; LeSage 1991: 309; Dearborn and Donahue 1993: 64; Downie and Arnett 1996: 1333.

Description.—*Head:* Dark reddish brown with vertex darker to black, labrum and basal segments of antenna yellow, apical segments reddish brown; densely, coarsely punctate; with silky, golden, closely appressed pubescence; front with medial line slightly evident; interantennal area flat.

Pronotum: Dark reddish brown with apical margin lighter and with very indistinct black macula on each side of middle at base; densely, coarsely punctate; with long, silky, golden, closely appressed pubescence; width averaging 1.25 times its length; widest at middle; sides evenly, broadly rounded; anterior transverse depression and lateral impressions deep to shallow.

Elytra: Reddish brown, each elytron with a black macula at base, at humerus, a linear dorsal one near suture, a row of three across disc, and row of three across apical third, discal and subapical maculae tend to unite transversely; length averaging 1.55 times width, 2.6 times length of pronotum; basal callosity slightly prominent; punctures completely confused on disc and base, tending to form rows only at posterior portion of suture and along lateral margins; punctures dense, coarse, and separated by less than the diameter of a puncture; intervals at lateral margins costate; pubescence composed of stiff, erect setae scattered between punctures and appressed setae as long as erect setae in punctures.

Venter: Black with apex of abdomen lighter; metasternum with very coarse punctures laterally; abdomen with very shallow punctures on last segment, intercoxal lobe rugose, all segments with lateral margins entire, last segment of male without large tubercles.

Legs: Femora dark reddish brown, inner surface of meso- and metafemora almost black, tibiae lighter reddish-brown; profemur with ventral tooth very small to obsolete, meso- and metafemora with ventral tooth small to very small. Male genitalia as in Figure 12b. Total length: 3.0 to 3.5 mm.

Notes.—This species was described as "inhabitating the United States." The present interpretation of *decemnotata* is based upon the original description which very clearly defines this species. We have been unable to locate the Say type in the Museum of Comparative Zoology (Perkins, per. comm.) and presume it to be lost and hereby designate a neotype (Article 75, ICZN 1999).

Specimens examined.—CANADA: MANITOBA: Aweme, 16.VII.1923, 30.VI.1922 (CNC); Brandon (CNC); Riding Mts., May 1912 (CNC); Treesbank, VI-11-14 (CNC); Winnipeg (CNC). NEW BRUNSWICK: Penobsquis, VII-29-26 (CNC). NOVA SCOTIA: Bridgetown (USNM); Digby Co., 2 Sep 18 (USNM). ONTARIO: Almonte, IX-9-1928 (CNC); Arnprior, VIII-28-1938 (CNC); Barry's Bay; Bell's Corner, 8-V-1951 (CNC); Consecon, 26-VIII-03 (CNC); Fitzory Harbor, 11-VII-1938 (CNC); Hastings Co. (CNC); Marmora, 11-8-1952, 21.IV.1952, 14.VIII.1952 (CNC);

Ottawa (CNC); Ridgeway, May 31, 1886, June 25, 1885, 7-5-08 (CASC); Timagami, 20-VIII-1932 (CNC); Toronto (CNC); Trenton, 4-IX-10 (CNC). QUEBEC: Aylmer, 25-5-01 (CNC); Burbridge, 27-5-1937 (CNC); Gatineau Park, VIII-11-1957 (CNC); Gracefield, 25-VI-1937 (CNC); Montreal Island (CNC). SASKATCHEWAN: Oxbow (USNM); Pike Lake, 24-V-1940 (CNC); Winnipeg (USNM). UNITED STATES: ALABAMA: ?: Barachias, June 9, 1924 (USNM). ARKANSAS: Benton Co.: Bentonville, 21-VI-31 (USNM). CONNECTICUT: (CASC). Fairfield Co.: Stamford (AMNH); Danbury (USNM). Hartford Co.: New Britain (USNM). Litchfield Co.: Colebrook, 21-V-1911, 23-VI-1914 (AMNH); Litchfield, VI-29-20, VIII-22-1925, VI-26-1925, VI-27-14, IX/4/11 (AMNH). Middlesex Co.: Killingsworth (USNM). Tolland Co.: Union, 2-IX-952 (USNM). DISTRICT OF COLUMBIA: (USNM); V-19-1956, 18/6, 18-11 (USNM); Rock Creek Park, Apr. 15 ‘07, May 27, 1906 (USNM). ILLINOIS: (USNM). ?: Chicago, 6-19-1920 (USNM); N. Ill. (USNM); Ravinia, VI.25.11, VIII.31 (USNM). Champaign Co.: Urbana, 26 Apr. 1947 (AMNH). Lawrence Co.: V-28-38 (CASC). McLean Co.: Heyworth, VIII-31 (USNM). IOWA: Clayton Co.: Guttenberg, 15.XI (USNM). Decatur Co.: Leon, 8-20-32 (USNM). Dickinson Co.: Lake Okoboji, VII-3-16 (USNM). Howard Co.: Elma, VIII-6-02 (USNM). Johnson Co.: Iowa City, 6.6.1896, V-4, 10-16-15, III-30-189, V-23 (USNM). Mahaska Co.: New Sharon, 8-5-32 (USNM). Monona Co.: Solon, 10-8-15 (USNM). Pottawattamie Co.: Council Bluffs, XI-19 (USNM). Story Co.: Ames, Sept. 29, 1888 (USNM). Winneshiek Co.: Decorah, XI-19 (USNM). KANSAS: Douglas Co.: 900 ft. (USNM). Pottawatomie Co.: Onago, June 16, 1901 (USNM). Riley Co.: May 5 (USNM). Shawnee Co.: Topeka, Apr. 27, Apr. 23, Jun. 12 (USNM). KENTUCKY: Fulton Co.: Fulton (USNM). LOUISIANA: (USNM). Lincoln Parish: Ruston, III-23–08 (USNM). MAINE: Kennebec Co.: Augusta (UAIC). Penobscot Co.: Orono, 5-1-49, 5-11-49 (UAIC). MARYLAND: Baltimore: VI-24-09, VII-22, VII-21 (CASC). Montgomery Co.: XI-21-1912 (USNM); Glen Echo, summer 1922 (USNM); Plummers Island, 3-VI-06, 24-5-08, 30-5-07, Sept. 14, 13, V-25-18, July 20, 26, Oct. 4, 14, 10-6-06, 21 May ‘26, 22.IV.03, 6.9, 3.V.04 (USNM). Prince George’s Co.: Beltsville, IV-18-1920 (USNM). MASSACHUSETTS: (AMNH). ?: Blue Hills. Berkshire Co.: Lenox, June 23, 1891 (AMNH); Mt. Tom, 30 May 95 (USNM); Monterey, July 14, 39 (USNM). Essex Co.: Brookline (AMNH); Cambridge (USNM). Franklin Co.: Sunderland, 8-VII-18 (CASC). Hampden Co:. Chicopee, May 17, 47 (USNM); Holyoke, Aug. 29, 98 (USNM); Springfield, 28 June 1903 (USNM); West Springfield, 3 May 1903, June 12, 96 (USNM). Norfolk Co.: Natick, XI-24-31 (UAIC). MICHIGAN: (USNM). ?: Detroit (USNM). Cheboygan Co.: 7-30-39 (SEMC). Easton Co.: East Lansing, 6 May 1940, 7 May 1940, 5-28-90 (UAIC). St. Joseph Co.: Three Rivers (USNM). Washtenaw Co.: Ann Arbor (USNM). MINNESOTA: ?: Alexandria, July 5, 1939, June 30, 1939, 28 June 1940, Aug. 11, 39 (USNM). Saint Louis Co.: Duluth (SEMC). MISSOURI: Adair Co.: Thousand Hills State Park, 13 Jun. 74 (USNM). Boone Co.: Ashland Wildlife Area, 23 Sept. 1977; Columbia, 8 May 78, 25 May 78 (USNM). Randolph Co.: Rudolph Bennett Wildlife Area, 21 May 78 (USNM). St. Louis Co.: Jefferson Barracks, IV-14-1900 (CASC). Stoddard Co.: 3.30.38, Nov. 6, 37 (SEMC). MONTANA: ?: Assiniboine, 21.8, 29.8, 23.8 (USNM). NEBRASKA: Cuming Co.: West Point, 8-87, 4-88 (USNM). NEW HAMPSHIRE: Carroll Co.: North Conway, IX-20-12 (USNM). Grafton Co.: Franconia (AMNH); Hanover (USNM). NEW JERSEY: (USNM). ?: Big Timber Creek, 11.19.1900 (USNM); Da Costa, VI-30 (CASC); Greenwood Lake, V-18-1919 (USNM); Split Rock, IV-21-01 (USNM). Bergen Co.: Ramsey, IX-28-13 (USNM).

Gloucester Co.: Newfield, IV-30-04 (USNM); Malaga, X-12-14 (USNM). Hunterdon Co.: Hamden, V-18-14, V-18-10 (AMNH). Morris Co.: Boonton, VI.6.01, VI.02, VI.1.01 (USNM); Chester, VII-5 (AMNH). Passaic Co.: Newfoundland, V-28-10 (AMNH); Oak Ridge, VI-26-1904 (USNM). Warren Co.: Phillipsburg, VII-19-14 (CASC). NEW YORK: (USNM). ?: Portage, May 30, 88 (CASC); Trenton (USNM). Chenango Co.: Guilford, VII-9-1925 (USNM). Erie Co.: Colden, 6-7-08 (CASC). Greene Co.: 2500 ft., Oct. 4, 1899 (USNM); New Baltimore, 1880 (AMNH). New York City: (USNM); Brooklyn (AMNH); Central Park, V-23–15 (AMNH); Flatbush, 12-V-1894, 30-IV-1894 (AMNH). Orange Co.: West Point, June 9, 1910, May 28, 1910, May 20, 1910, June 13, 1912, June 11, 1911, May 25, 1908, Apr. 27, 1911, May 10, 1902, Sept. 30, 1909 (USNM). Niagara Co.: Buffalo, June 1896 (CASC); Niagara Falls, 10-15-11 (CASC). Oneida Co.: Remsen, 7-25-1946 (SEMC). St. Lawrence Co.: Rossie, VIII.26.1955 (USNM). Schenectady Co.: Schenectady, VI-19, 26-VIII-09 (USNM). Suffolk Co.: Yaphank, V-27-17 (AMNH). Tompkins Co.: Ithaca, Mar. 04, May 7, 1939, 17 May 1938, 2 May 1937, 27 May 34, 2 June 1936 (USNM); McLean Bogs Res. (USNM). Ulster Co.: (USNM); Oliverea, VI-18-18 (USNM). Washington Co.: Lake George, 25.VIII.1894, 30.8.1893, July 27, 14 (AMNH). Wyoming Co.: Pike, 6-4-1900 (USNM). NORTH CAROLINA: ?: Graybeard Mt., VI-17, V-26 (AMNH). Avery Co.: VI-15-1955 (USNM). Henderson Co.: Black Mountains, VI-VII 1902, IX-24, IX-20-01 (AMNH, CASC). Jackson Co.: Balsam, 20.IV.1955 (USNM). Lincoln Co.: Lincoln, 1 August 1995 (NCSU). Richmond Co.: Rockingham, IV-22-1955 (USNM). Surry Co.: Doughton State Park, VI-2-1955 (USNM). Wake Co.: Raleigh, IV-3-1955 (USNM); Schenk Forest, 16-VII-1991 (NCSU). Yancy Co.: Mt. Mitchell, 6200 ft., VI-20-1937 (USNM). OHIO: Franklin Co.: Columbus, VI-11, V-30 (CASC). Ross Co.: (USNM). PENNSYLVANIA: (AMNH). ?: Ashbourne, 4-19-17 (USNM); Spring Brook, V-9-45 (USNM); Water Gap (AMNH). Dauphin Co.: VI-20-96 (USNM). Monroe Co.: Canadensis, VII-X-1926, IX-21-1926 USNM). SOUTH CAROLINA: Florence Co.: Florence, 7 Dec. 1937 (USNM). TENNESSEE: ?: Great Smoky Mts. National Park, V-18-1957 (CMNC). Knox Co.: Knoxville, VIII-1956 (CMNC). Putnam Co.: Clarksville, 4-7-08, 4-20-09 (USNM). Smith Co.: Elmwood (CASC). VERMONT: Lamoille Co.: Stowe, VI-23-13 (USNM). Windham Co.: Brattleboro, Spring 94 (USNM). VIRGINIA: ?: Middle Mt., 4000 ft., June 14, 39 (USNM). Arlington Co.: Glencarlyn, Sept. 27, 1914, 1-V-10 (USNM). Augusta Co.: Mt. Elliott, 20-6-34 USNM). Fairfax Co.: Great Falls, June 8, 22, June 30, 1914 (USNM); Vienna, 30-6-43 (USNM). Rockbridge Co.: Buena Vista, Jul. 26, 1953 (USNM). WEST VIRGINIA: Greenbrier Co.: White Sulphur Springs, July 5, 1910, July 3, 1912 (USNM). Taylor Co.: Grafton (USNM). WISCONSIN: Polk Co. (USNM): July. Total: 585.

Xanthonia furcata Staines and Weisman, new species

(Figs. 4, 12c)

Holotype.—♂, Union Co., Ill., Jun. 3, '31, 37-21148/wild cherry foliage, W. F. Turner, T-5048/Xanthonia sp. HSB '37/Holotype Xanthonia furcata Staines and Weisman [red label] (USNM).

Allotype.—♀, same label data as holotype/Allotype Xanthonia furcata Staines and Weisman [red label] (USNM).

Paratypes.—1 ♂, 2 ♀ with same label data as holotype/Paratype Xanthonia furcata Staines and Weisman [red label] (USNM); 3 ♂, 2 ♀ Reformed, Missouri, Callaway County/Coll. E. G. Riley, 2 June 1975/Paratype Xanthonia furcata Staines and Weisman [red label] (EGRC).

Description.—*Head:* Reddish brown, labrum and antenna yellow; densely, coarsely punctate; with silky, ashen, re-

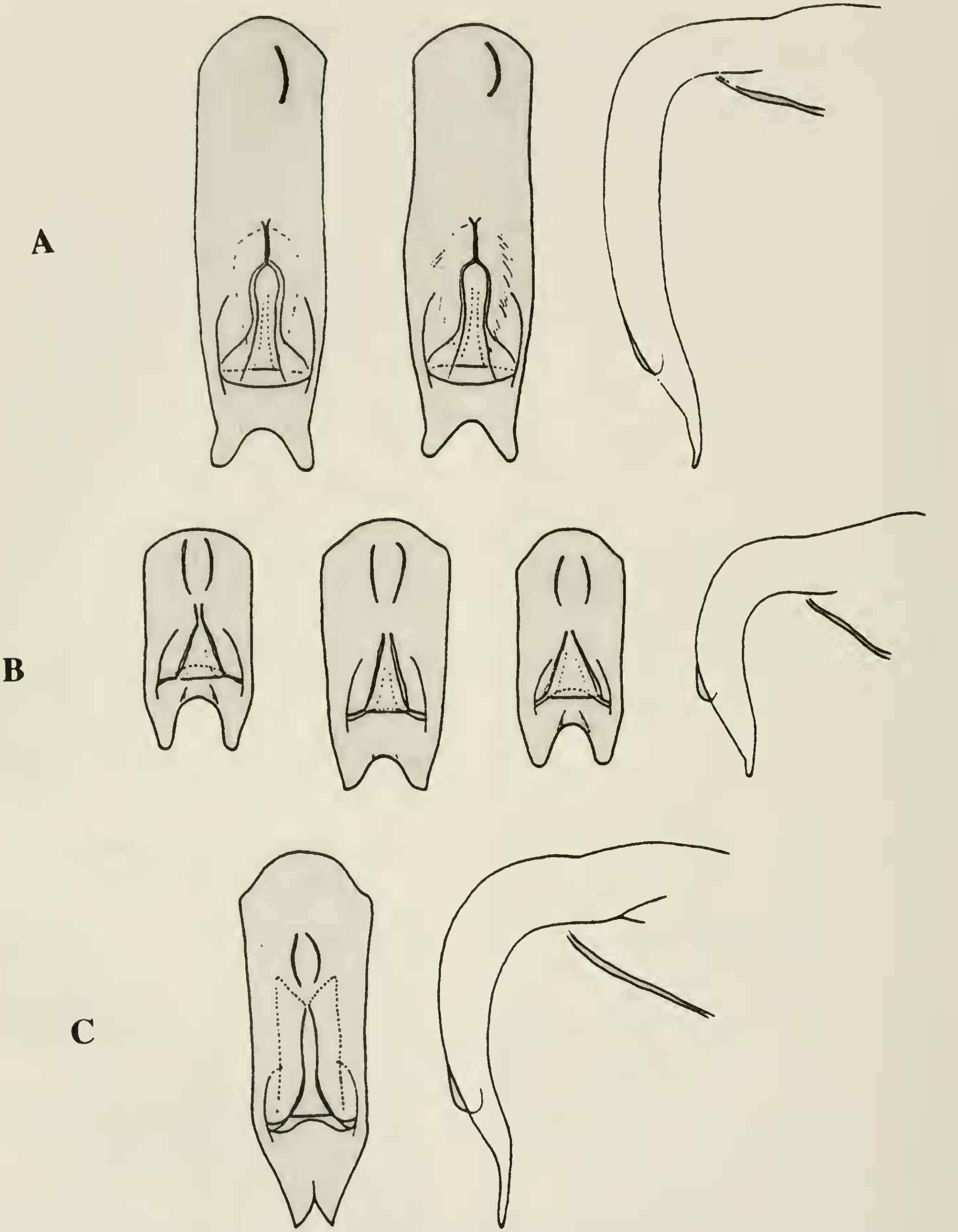


Fig. 12. *Xanthonia* spp., dorsal and lateral views of aedeagi. a, *X. angulata*, b, *X. decemnotata*. c, *X. furcata*.

cumbent pubescence; front with medial line very weak to completely absent; interantennal area flat.

Pronotum: Uniformly reddish brown; densely, coarsely punctate; with silky, ashen, recumbent pubescence; width averaging 1.2 times length; widest behind middle; sides angulate behind middle, slightly rounded and converging apically, strongly rounded behind; anterior transverse depression very shallow, lateral impressions obscure.

Elytra: Reddish brown each elytron with dark reddish-brown to blackish macula at middle of base, one on humerus; one on middle of disc, one at apical third, and with a common medial macula in front of middle, markings occasionally indistinct; length averaging 1.35 times width, 2.45 times length of pronotum; basal callosity slightly prominent; punctures in irregular rows which tend to double, confused near scutellum, behind sulcus, and below humerus; diameter of a puncture as large as width of an interval on disc; intervals nearly flat on disc, becoming costate on lateral areas and at apex; pubescence composed of erect, stiff setae in single rows on every other interval and appressed setae in punctures nearly as long as setae on intervals.

Venter: Dark reddish brown along midline, becoming lighter toward apical abdominal segments and darker toward lateral margins; metasternum with small punctures at lateral margins; abdomen with a few moderately coarse punctures on intercoxal lobe and on middle of last segment, all segments with lateral margins entire, last segment of male without large tubercles.

Legs: Yellow; femora darker to fuscous on inner surface and apex; ventral tooth absent on all femora. Male genitalia as in Figure 12c. Total length: 2.8 to 3.5 mm.

Etymology.—From *furca* (Latin), fork; for the sharply pointed apices of the aedeagus.

Notes.—This species can be distinguished from all other North American species by its very distinctive aedeagus which has sharply pointed apices and an acutely angled apical emargination.

Plant associations.—Specimens have been collected from foliage of *Prunus* spp.

Distribution.—ILLINOIS: Union Co. MISSOURI: Callaway Co.

Xanthonia intermedia Staines and Weisman, new species

(Figs. 5, 13a)

Holotype.—♂, Landae, Chambers Co. Alab/HHSmith coll./Holotype Xanthonia intermedia Staines and Weisman [red label] (USNM).

Allotype.—♀, same label data as holotype/Allotype Xanthonia intermedia Staines and Weisman [red label] (USNM).

Paratypes.—10, each with Paratype Xanthonia intermedia Staines and Weisman [red label]: 4 ♂, 3 ♀: same label data as holotype; 1 ♂: Boone Co., Iowa, 4-VII-32/ County #47, IOWA, July 4, 1932, Russell (USNM); 1 ♂: Wankon, Iowa, VII-2-'14, Stoner (USNM); 1 ♂: Iowa City, Iowa, VII-12-'10, Stoner (USNM).

Description.—*Head:* Light reddish brown, labrum and antenna yellowish brown; densely, coarsely punctate; with golden, closely appressed pubescence; front with medial line slightly impressed; interantennal area varying from moderately to slightly concave.

Pronotum: Light reddish brown; densely, coarsely punctate; with short, golden, recumbent pubescence; width averaging 1.4 times length; widest behind middle; sides fairly evenly, broadly rounded; anterior transverse depression moderately deep to shallow; lateral impressions obscure.

Elytra: Yellowish brown with reddish brown common medial macula, each elytron with reddish brown macula at middle of base, one on humerus, a row of three across disc and three across apical third, discal and apical maculae tend to unite longitudinally; length averaging 1.3 times width, 2.85 times length of pronotum; basal callosity slightly prominent; punctures in fairly regular rows, confused near scutellum, behind sulcus, and below humerus; punctures as large or larger than width of intervals on disc; intervals costate at lateral margins and apex, often with two costae on each disc; pubescence composed of erect setae in single lines on intervals and an appressed seta nearly as long as erect setae in each puncture.

Venter: Reddish brown with apex of abdomen lighter, abdomen occasionally fuscous; metasternum with moderately coarse punctures at lateral margins; abdomen with

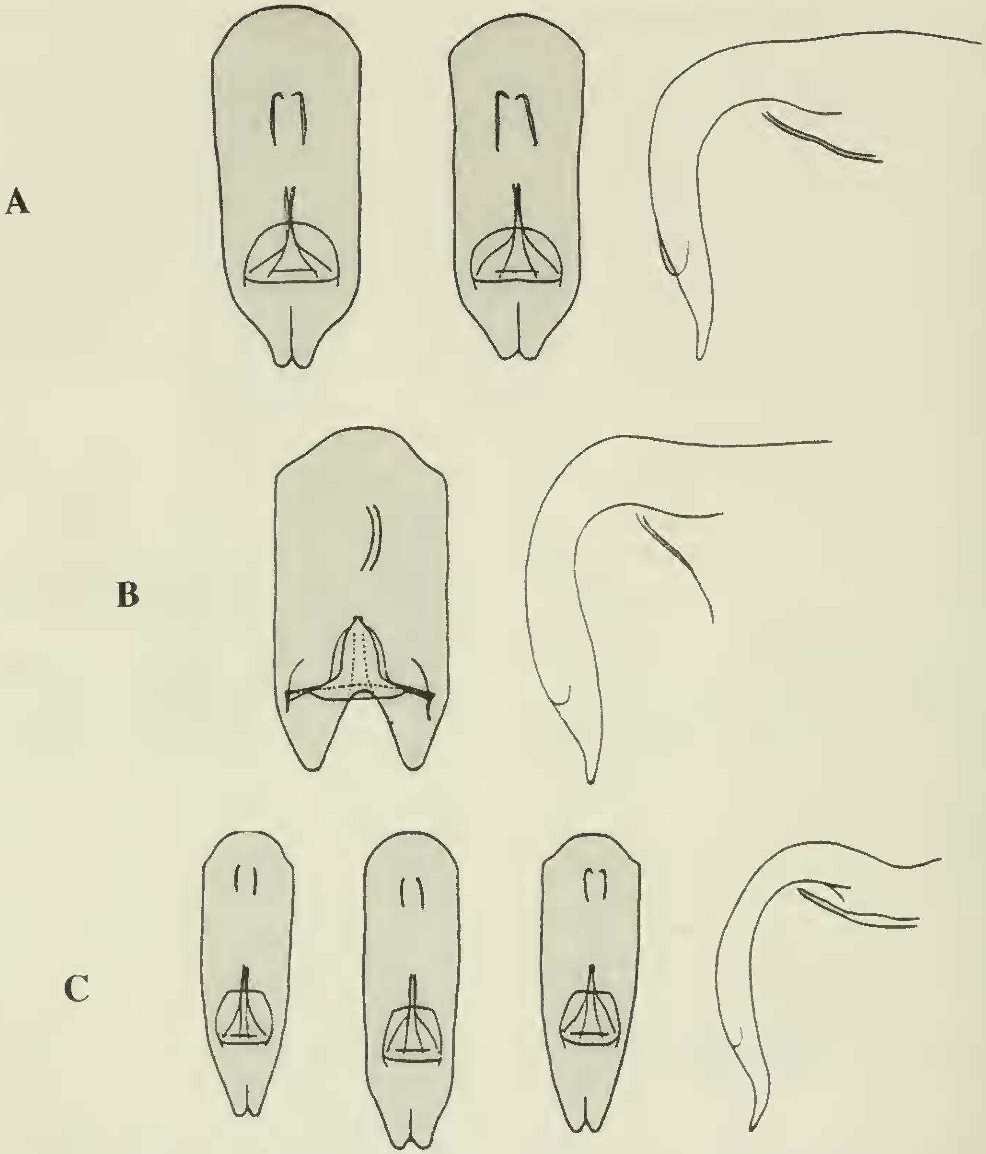


Fig. 13. *Xanthonia* spp., dorsal and lateral views of aedeagi. a, *X. intermedia*. b, *X. monticola*. c, *X. serrata*.

moderately coarse punctures on intercoxal lobe, segments four and five with lateral margins very irregularly notched, notches increasing in number toward apex; last segment of male with low tubercles each side of middle, area between tubercles flat, depressed.

Legs: Yellowish brown; all femora with ventral tooth very small to obsolete. Male genitalia as in Figure 13a. Total length: 2.8 to 3.0 mm.

Etymology.—Combination of *inter* = between and *medius* = middle (Latin); for the unifying character of the this species.

Notes.—This species is very similar to *villosula* and can be distinguished by the lateral margins of the last three abdominal segments being notched and the rounded apical lobes of the aedeagus.

Distribution.—ALABAMA: Chambers Co. IOWA: Boone Co.

Xanthonia monticola Staines and Weisman, new species

(Figs. 6, 13b)

Holotype.—♂, Avery Co., NC, VI-15-1955, D. M. Weisman/4000'/Holotype Xanthonia monticola Staines and Weisman [red label] (USNM).

Allotype.—♀, same label data as holotype/Allotype Xanthonia monticola Staines and Weisman [red label] (USNM).

Paratypes.—42, each with Paratype Xanthonia monticola Staines and Wesiman [red label]: 31 ♂, 9 ♀—same label data as holotype; 1 ♂—Black Mts., VI/10 NC (AMNH); 1 ♂—July/Greene Co. NY, 2500 ft./L. O. Howard Coll. (USNM).

Description.—Coloration variable; most males with head black, becoming dark reddish brown on front, clypeus yellowish brown, pronotum, elytra, and venter black, legs yellowish brown with femora fuscous dorsally and apically; females and one male specimen with head, pronotum, and venter light reddish brown, elytra, labrum, antenna, and legs yellowish brown.

Head: Densely, coarsely punctate; with short, golden, closely appressed pubescence; front with medial line moderately impressed, extending to vertex; interantennal area deeply to moderately concave.

Pronotum: Densely, very coarsely punctate; with fine, dense, golden, recumbent pubescence; width averaging 1.4 times length; widest at middle; sides fairly evenly, moderately rounded; anterior transverse depression and lateral impressions very to moderately deep.

Elytra: Length averaging 1.4 times width, 3.0 times length of pronotum; basal callosity moderately prominent; punctures in regular rows, confused only near scutellum, behind sulcus, and below humerus; punctures about half the width of an interval on disc; intervals flat on disc, becoming costate near lateral margins and apex; pubescence composed of very fine, semierect setae in single rows on the intervals and very short, obscure, appressed setae in punctures.

Venter: Metasternum with moderately coarse, shallow punctures at lateral margins; abdomen without coarse punctures, with sparse fine punctures on last segment; all segments with lateral margins entire; last segment of male without large tubercles.

Legs: Femora with ventral tooth obsolete to absent. Male genitalia as in Figure 13b. Total length: 3.5 to 4.0 mm.

Etymology.—From *monticulus* (Latin) = mountain; for this species apparent restriction to mounatinous areas.

Notes.—This species is similar to *stevensi* but can be distinguished by the very coarse punctures on the pronotum and head and the male genitalia. This species appears to be limited to the higher mountains of the eastern United States.

Distribution.—NEW YORK: Greene Co. NORTH CAROLINA: Avery Co.; Henderson Co.: Black Mts.

Xanthonia serrata Staines and Weisman, new species

(Figs. 7, 8, 13c)

Holotype.—♂, Glen Echo, MD, VI-28-30/JCBridwell coll./Holotype Xanthonia serrata Staines and Weisman [red label] (USNM).

Allotype.—♀, same label data as holotype/Allotype Xanthonia serrata Staines and Weisman [red label] (USNM).

Paratypes.—222, each with Paratype Xanthonia serrata Staines and Weisman [red label]: 39—with same label data as holotype; 2—Glen Echo, MD, summer 1922/JCBridwell (USNM); 1—Montg. Co. MD, VI-17-1911/Ernest Shoemaker Collection (USNM); 1—Montg. Co. MD, VI-19-1909/Ernest Shoemaker Collection (USNM); 1—Cabin John Br. MD, 29/VII/14/V. Roberts Coll. (USNM); 1—Plummers Isld MD, 4-6-08/W. L. McAtee Collector (USNM); 1—Plummers Isld MD, 19-6-06/W. L. McAtee Collector (USNM); 1—Plummers Isld MD, 17-8-14/RCShannon Collector (USNM); 1—Plummers Isld MD, 28-5-08/DHClemons Collector (USNM); 1—Plummers Isld MD, 13-5-08/DHClemons Collector (USNM); 1—Plummers Isld MD, VI-17-15/WLMcAtee Collector; 1—Plummers Isld MD, 31-5-09/WLMcAtee Collector (USNM); 1 Plummers Isld MD, 21-VI-08, F. Knab (USNM); 1—Great Falls MD, 27-05/DHClemons Collector/F. Knab collection (USNM); 2—Langsdale, Chambers Co. Alab/HHSmith coll (USNM); 1—Wadley Alab/HHSmith coll (USNM); 1—So. Meriden Ct., 7-6-1914, Harry Johnson/WSAbbott 1932 thru Bridwell (USNM); 5—Washgtn DC (USNM); 1—D of Col., 6-19-1919/Ernest Shoemaker Collection (USNM); 1—Washgtn DC, F. Knab, 24-4-04 (USNM); 1—Washgtn DC, 29-5/Coll. Hubbard and Schwarz (USNM); 1—Washgton DC, 27-6/Coll. Hubbard and Schwarz (USNM); 3—Rosslyn VA/Coll. Chittenden (USNM); 1—Rosslyn VA, 5-10/Coll. Chittenden (USNM); 1—Rosslyn VA, 6-25/ Coll. Chittenden (USNM); 1—Alex. Co. Va, VI-15-03/Ernest Shoemaker Co. (USNM); 1—Alex. Co. Va, VI-18-10/Ernest Shoemaker Co. (USNM); 2—Penington Gap VA, 2-7/Collection Hubbard and Schwarz (USNM); 1—Glencarlyn VA, F. Knab, 30-V-06 (USNM); 1—Glencarlin, Alex. Co. VA, VI-23-1912/Ernest Shoemaker Collection (USNM); 1—4-Mile Run VA, June 29-1913/A. Wetmore Collector (USNM); 1—on Solidago/Glencarlyn VA, VI-16-29/Bridwell collector (USNM); 1—Cumdb Mts., Lee Co VA, 6-19/Hubbard and Schwarz Collection (USNM); 1—Mt. Vernon VA, VI-17-1917/Ernest Shoemaker Collection (USNM); 1—Falls Church VA, VI-27-10/L.L. Buchanan Collector (USNM); 1—W. Sulpher W.Va., July 26, 1911, W. Robinson (USNM); 1—Everett, Mass., 1901/WM Mann Coll. 1954 (USNM); 1—Aug. 7, 98, Montgomery, Mass./Fredk Knab Collector (USNM); 1—Montgomery City, Mo., VI-15-1930, Stewart Clare/Wolf Creek/on hickory (USNM); 2—N.Y./Coll. MLLinell (USNM); 2—N.Y./Collection JHSmith (USNM); 4—N.Y. (USNM); 2—Xanthonia stevensi Lond id/W. Robinson bequest (USNM); 1—Ithaca NY/coll. Chittenden (USNM); 2—NJ (USNM); 1—Malaga NJ, VI-16-12/Ernest Shoemaker Collection (USNM); 2—Malaga NJ, VI-14-13/Ernest Shoemaker Collection (USNM); 1—Atco NJ, 6-22/GeoMGreene collection (USNM); 6—Black Mts. NC, VI/11 (AMNH); 1—Black Mts., NC, VI-3 (AMNH); 1—Black Mts., NC, VI-21 (AMNH); 2—Black Mts., NC, VI-29 (AMNH); 2—Black Mts., NC, VI-24 (AMNH); 2—Black Mts., NC, VI-23 (AMNH); 1—Black Mts., NC, 18 July 1916, R. W. Leiby/about 5050 ft. (USNM); 1—Highlands NC/David A. Young, June 5, 1957/on hickory (USNM); 2—Valley of Black Mts., NC, Aug. 9, 1906, W. Beutenmuller (AMNH); 1—Valley of Black Mts., NC, Aug. 5, 1906, W. Beutenmuller (AMNH); 1—Valley of Black Mts., NC, Aug. 6, 1906, W. Beutenmuller (AMNH); 1—Valley of Black Mts., NC, Aug. 16, 1906, W. Beutenmuller (AMNH); 2—L. Toxaway N.C./Collection of Mrs. A. T. Slosson, Acc. 20226 (AMNH); 1—Tryon NC/WFFiske Collector (USNM); 2—Swannanoa Val. NC, V-20-21 (AMNH); 1—Red Knob N.C., 23-6/Coll. Hubbard and Schwarz (USNM); 13—Blowing Rock N.C., VI-27-1955, DM Weisman/white oak (USNM); 1—Robbinsville N.C./David A. Young, July 24, 1958 (USNM); 1—Gray Beard Mt. N.C. ?/17/Collection F. Knab (USNM); 1—collection F. Knab (USNM); 2- Mon/Coll. Chittenden (USNM); 1—July 1, 94,—town/Fredk Knab Collection (USNM); 50—Gasconade Co., Mo., 1.7 mi S Mt. Sterling, June 10, 78, Coll. E. G. Riley (EGRC); 1—TENN., Dekalb Co., Tech-Aqua Area, at light—15 Aug. 1976, W. M. Beck, Jr. (EGRC); 11—Jct. FF and A, Gasconade Co., Mo., 26 June '74, Coll. E. G. Riley (EGRC); 5- GA, Union Co., Brasstown Bald, Jack's Knob Trail, 2 July 1983, R. Turnbow (EGRC); 3—LA., E. Feliciana Par., Camp Avondale, 3 mi E. Clinton, V-22-83, Coll. E. G. Riley (EGRC); 1—VA, Botetourt Co., Craig Creek, ca. 2 mi. W.

Eagle Rock, VI-14-1991, Coll. E. G. Riley (EGRC).

Description.—*Head:* Reddish brown, labrum and antenna yellowish brown; densely, coarsely punctate; with short, golden, closely appressed pubescence; front with medial line very weak; interantennal area varying from slightly concave to flat.

Pronotum: Reddish brown with darker area in middle of disc; densely, coarsely punctate; with short golden, recumbent pubescence; width averaging 1.35 times length; widest at middle; sides evenly broadly rounded; anterior transverse depression shallow; lateral impressions obscure.

Elytra: Light reddish brown with black median macula at suture, each elytron with black macula at middle of base, one on humerus, one in middle and one on lateral area of disc, one near suture and one on lateral area of apical third, discal and subapical maculae tend to unite; markings often lighter in color and indistinct, occasionally reduced in number; length averaging 1.3 times width, 2.45 times length of pronotum; basal callosity slightly prominent; punctures almost completely confused over disc and base, tending to form rows at suture and along lateral margins; often with two longitudinal costae on disc; punctures separated by their diameters; intervals at lateral margins and apex costate; pubescence composed of erect setae tending to be in single lines spaced about two punctures apart and appressed setae in punctures nearly as long as erect setae.

Venter: Dark with apex of abdomen lighter; metasternum with moderately coarse punctures at lateral margins; abdomen with moderately coarse punctures in middle of first and last segments; last three segments with lateral margins finely serrate; last segment of male without large tubercle.

Legs: Yellowish brown; profemur with ventral tooth small to very small; meso- and metafemora with ventral tooth very small to obsolete. Male genitalia as in Figure 13c. Total length: 2.4 to 2.8 mm.

Etymology.—From *serra* (Latin) = saw; for the finely serrate lateral margins of the abdomen.

Notes.—Some specimens are yellowish-brown with light reddish-brown head and pronotum and without darker markings. The darkest specimens have all discal and subapical maculae completely fused, the dark area on the pronotum extending to and laterally along the apical margin, vertex of head darker than front, venter completely black, and the apices of femora darker.

This species is most similar to *villosula* and can be distinguished by the elytral punctures being confused, the slightly smaller size, and the male genitalia.

Plant associations.—Specimens have been collected on *Carya, Quercus alba* L., and *Solidago.*

Distribution.—ALABAMA: Chambers Co.: Langsdale; Randolph Co.: Wadley. CONNECTICUT: New Haven Co.: South Meridan. DISTRICT OF COLUMBIA. GEORGIA: Union Co.: Brasstown Bald. LOUISIANA: East Feliciana Parish: Clinton. MARYLAND: Montgomery Co.: Cabin John Bridge; Glen Echo; Great Falls; Plummers Island. MASSACHUSETTS: Essex Co.: Everett; Hampden Co.: Montgomery. MISSOURI: Gasconade Co.: Mt. Sterling. Montgomery Co.: Montgomery City. NEW JERSEY: Gloucester Co.: Malaga; Ocean Co.: Atco. NEW YORK: Tompkins Co.: Ithaca. NORTH CAROLINA: ?: Gray Beard Mt.; Tryon; Red Knob; Buncombe Co.: Swannanoa Valley; Graham Co.: Robbinsville; Henderson Co.: Black Mts.; Valley of Black Mts.; Macon Co.: Highlands; Transylvania Co.: Lake Toxaway; Watauga Co.: Blowing Rock. TENNESSEE: Dekalb Co.: Aqua-Tech Area. VIRGINIA: ?: 4-Mile Run; Alexandria: Mt. Vernon; Arlington Co.: Glencarlyn; Botetourt Co: Craig Creek; Fairfax Co.: Falls Church; Rosslyn; Lee Co.: Cumberland Mts.; Penington Gap. WEST VIRGINIA: Greenbrier Co.: White Sulphur Springs.

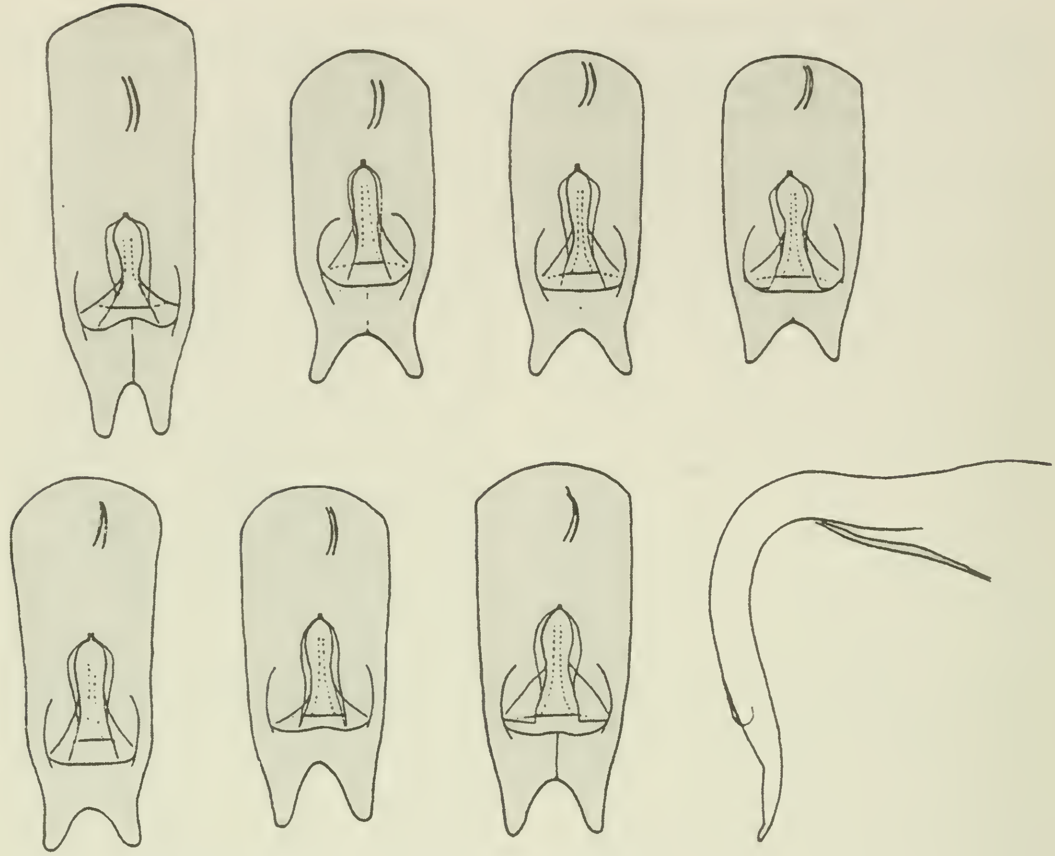


Fig. 14. *Xanthonia stevensi*, dorsal and lateral view of aedeagus.

Xanthonia stevensi Baly
(Figs. 9, 14)

Xanthonia stevensi Baly 1863: 151 [neotype ♂ (here designated): Sept./Montreal Que/Moxnote Colln 1940/NEOTYPE Xanthonia stevensi Baly, des. C. L. Staines 1999 (red label) (USNM)]. Crotch 1873a: 96, 1873b: 34; Gemminger and Harold 1874: 3376; Lefèvre 1885: 74; Wickham 1888: 89; Osborn 1892: 34.

Description.—Variable in coloration but usually with head black, becoming dark reddish brown on front, clypeus yellow; labrum and antenna yellowish brown; pronotum, elytra, and venter black; legs yellowish brown with femora occasionally fuscous dorsally and apically; specimens ranging from black through dark brown, dark reddish brown to yellowish brown with light reddish brown head and pronotum.

Head: Densely, coarsely punctate; with short, golden, closely appressed pubescence; front with medial line faintly impressed, extending to vertex; interantennal area deeply to moderately concave.

Pronotum: Densely, coarsely punctate; with fine, dense, golden, recumbent pubescence; width averaging 1.4 times length; widest at middle; sides evenly, moderately rounded; anterior transverse depression and lateral impressions very to moderately deep.

Elytra: Length averaging 1.4 times width, 3.05 times length of pronotum; basal callosity moderately prominent; punctures in regular rows, confused only near scutellum, behind sulcus, and below humerus; punctures about half as wide as an interval on disc; intervals flat on disc, becoming costate near lateral margin and apex; pubescence composed of very fine, semierect setae in single rows on intervals and very short, obscure, appressed setae in punctures.

Venter: Metasternum with moderately coarse, shallow punctures at lateral margin; abdomen without coarse punctures, with sparse, fine punctures on last segment; all segments with lateral margins entire; last segment of male without large tubercles.

Legs: Femora with ventral tooth obsolete to absent. Male genitalia as in Figure 14. Total length: 3.4 to 4.2 mm.

Notes.—This species was first described from Canada and is the type species of the genus. The types of most of Baly's species are deposited in The Natural History Museum (London) (Staines and Staines 1999). During a visit to this collection the type of *stevensi* was not located, nor did Baly's notes indicate that it was deposited elsewhere. We presume the type to be lost and designate a neotype from Canada which is deposited in the USNM (Article 75, ICZN 1999). The present interpretation is based on the original description.

This species shows considerable variation in external morphology and aedeagal shape. Specimens for additional localities and detailed biological information may necessitat a division of this species.

This species is very similar to *monticola* but can be distinguished by the male genitalia and the moderately coarse punctation of the head and pronotum.

Plant associations.—Adults were collected on *Prunus* (Roseaceae) and *Quercus marilandica* Muenchh. (Fagaceae).

Specimens examined.—No labels (USNM). CANADA: QUEBEC: Hemmingford, 5-VII-1925 (CNC); Montreal, no date (USNM); 1-VII-98 (CNC); IX-20-01 (USNM). UNITED STATES: ALABAMA: no further data (AMNH). CONNECTICUT: Litchfield Co.: Colebrook, 23-VI-1914 (CNC); Litchfield, 8/9/12 (AMNH). ILLINOIS: ?: Edgebrook, V-30, 7-18-15 (USNM). DuPage Co.: S Maywood, VIII-9-03 (USNM). INDIANA: no further data (USNM). ?: Miller: VI-29-12 (USNM). IOWA: Dickinson Co.: Lake, VII-22-16 (USNM). KANSAS: Pottawatomie Co.: Onaga, June 16, 1901 (USNM), VI-10-08, VI-15-23 (CASC). Shawnee Co.: Topeka, Jul. (USNM). MARYLAND: Baltimore: VI-24-09, VII-6-09 (CASC). Montgomery Co.: Plummers Island, 19-6-09, 10-VI-08 (USNM), V-30 (CASC). MASSACHUSETTS: Franklin Co.: Sunderland (Mt. Toby), 8-VII-18 (CASC). Hampden Co.: Montgomery, June 19, 93 (USNM); Springfield, June 30, 1900 (USNM). Hampshire Co.: Mt. Tom, June 26, 1900 (USNM). MICHIGAN: Eaton Co.: Grand Ledge (USNM). MISSOURI: Girardeau Co.: Dutchtown (USNM). NEBRASKA: Otoe Co.: Nebraska City (USNM). NEW JERSEY: no further data (USNM). NEW YORK: no further data (AMNH). Tompkins Co.: Ithaca, no date, 6/15, 14-VII-1916 (USNM). Yates Co.: Dundee, 13-6 (USNM). NORTH CAROLINA: Cherokee Co.: Murphy (CASC). Henderson Co.: Black Mts., no date, VI–VII, 1902 (CASC). PENNSYLVANIA: ?: Spring Brook, VI-27-1940 (USNM). Monroe Co.: VI-23-1924 (USNM). TENNESSEE: Hamilton Co.: Chattanooga, May 31, 56 (CMNC). VIRGINIA: Arlington Co.: Glencarlyn, V-30-1934 (USNM). Lee Co.: Pennington Gap, 10-7 (USNM). Total: 114.

Xanthonia striata Staines and Weisman, new species

(Figs. 10, 15a)

Holotype.—♂, Hanover, Pa., 15-6′30, Birdwell and Barber/Holotype Xanthonia striata Staines and Weisman [red label] (USNM).

Allotype.—♀, same label data as holotype/Allotype Xanthonia striata Staines and Weisman [red label] (USNM).

Paratypes.—424, each with Paratype Xanthonia striata Staines and Weisman [red label]: 20—same label data as holotype (USNM); 1—Pyziton, Clay Co., Alab/

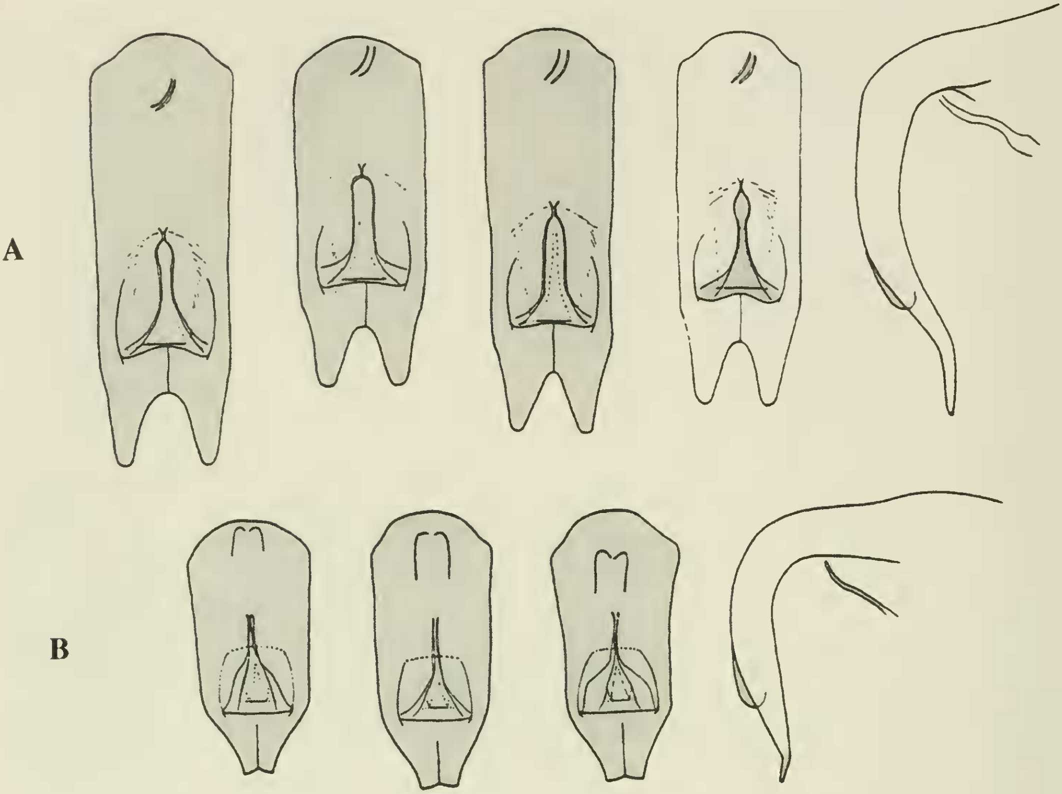


Fig. 15. *Xanthonia spp.*, dorsal and lateral view of aedeagi. a, *X. striata*. b, *X. villosula*.

HHSmith Coll (USNM); 1—New Haven, Ct., E. P. Van Duzee/Monnett Col. 1940 (USNM); 2—D.C. (USNM); 3—Washgtn DC, VI-30-1956, D. M. Weisman (USNM); 3—Washngtn DC, FKnab, 3-VII-04 (USNM); 1—Washngtn DC, 5 May 95/ F.C.Pratt Collector (USNM); 1—♀/ Washgnt DC/Coll. Hubbard and Schwarz (USNM); 1—Brightwood DC, 26-6-05/ DHClemson Collector/Collection FKnab (USNM); 1—Rock Creek, June 11 1906, Washington DC (USNM); 1—Rock Creek June 12 1906, Washington DC (USNM); 1—Rock Creek Pk DC, Jun 14'07, C. E. Burden (USNM); 1–37 mi W Wash DC, ABGurney, 18 Jul 37 (USNM); 1—Yonah Mt., Ga., 6-20-39, P. W. Fattig/2898 (USNM); 1—♀/Armuchee, Ga., 6-10-37, P. W. Fattig/2898 (USNM); 1— Kentucky, Ft. Knox, 23 June 1956/ABGurney Colr (USNM); 3—Baltimore Md, VI-26/F. E. Blaisdell, 09 Collector/Blaisdell Collection (CASC); 1—Baltimore Md., VI-18-09/F. E. Blaisdell Collector/Blaisdell Collection (CASC); 1—Bladensburg, Md, VII-1-20/ LLBuchanan Collector (USNM); 5—Glen Echo Md, V/28–30/JC Bridwell coll (USNM); 1—Glen Echo Md, June 18 1922/ JRMalloch Collector/Specimen No. 218 (USNM); Grt Falls Md/Washngtn DC, 28-VI-'30, J. C. Bridwell (USNM); 4—So. Mt., Hagerstown Md, Aug 6–13/WSAbbott 1932 thru Bridwell (USNM); 8—South Mts. near Meyersville Md/July 13, 1915/ HLParker Collector (USNM); 5—S. Mts. near Myersville Md/Sept. 2 15/JAHyslop Collector (USNM); 2—South Mountain Md, Jy 6–16/JAHyslop Collector (USNM); 1—Odenton Md, June 11 1922/LLBuchanan Collector (USNM); 10—Wolfsville Md, Jy 31, 1915/WFPennington Collector/Bushes (USNM); 1—Aug.17.1902. Mt. Tom, Mass. Fred K Knab Collector (USNM); 1—Marion Mass, VII 99/Wickham Collection 1933 (USNM); 1—5671, Mo. (USNM); 1—♀/N.J./Fred K Knab Collector (USNM); 1—N.J./Fred K Knab Collector/91 (USNM); 1—N.J./Fred K Knab Collector (USNM); 1—Avalon N.J./July/Kemp/A. Fenyes Collection (CASC); 1—Boonton NJ, VI.4.01/GeoMGreene Collection (USNM); 1—Boonton NJ, VII.24.01/GeoMGreene Collection (USNM); 1—Boonton NJ, VII.8.01/GeoMGreene Collection (USNM); 1—Boonton NJ, VI.6.01/GeoMGreene Collection (USNM); 4—Colingwd NJ, VI.21/GeoMGreene Collection (USNM); 1—Dundalk NJ, V.31.03/GeoMGreene Collection (USNM); 1—Dundalk NJ, VII.4.03/GeoMGreene Collection (USNM); 1—Dundee Lake NJ, VIII.31.07/GeoMGreene Collection (USNM); 2—Fort Lee NJ, JLZabriskie, 25-VII-1894 (AMNH); 1—Malaga NJ, VIII.4.07/GeoMGreene Collection (USNM); 1—Midvale N.J., VII-24-43/Ernest Shoemaker Collection (USNM); 2—Montclair N.J., VIII-13-21/Ernest Shoemaker Collection (USNM); 1—Oak Ridge N.J., 7-18-194/Ernest Shoemaker Collection (USNM); 7—Phillipsburg N.J., VIII-2-14/J. W. Green Collector/J. W. Green Collection (CASC); 2—F1047/Ramsey N.J., Aug. 22.09 (AMNH); 1—Riv. NJ, 7.3.99/GeoMGreene Collection (USNM); 1—Sand Hills N.J., VII.21.09/Am. Mus. Nat. Hist. Dept. Invert. Zool. No. 14614 (AMNH); 1—Seal Isle City NJ, V.3.96/Lucarreni Collector/GeoMGreene Collection (USNM); 7—N.Y. (USNM); 1—New York/Am. Mus. Nat. Hist. Dept. Invert. Zoo. No. 14613 (AMNH); 3—L.I. (USNM); 2—Long I., N.Y., 6-24-06/Ernest Shoemaker Collection (USNM); 2—Long I., N.Y., 7-1-06/Ernest Shoemaker Collection (USNM); 1—Agnedt, LI, VII-14-12/Ernest Shoemaker Collection (USNM); 1—Allegany St. Pk. N.Y., 7-4-40/A. Saunders Collector (USNM); 1—Alps N.Y., VIII.19.09/Charles Schaeffer Collection/HSBarber Bequest 1950 (USNM); 1—Bronxville NY, VI-20'14/Quercus rubra/Collection of L. B. Woodruff Ac. 26824 (AMNH); 1—Bronxville NY, VII-2-'14/Quercus rubra/Collection of L. B. Woodruff Ac. 26824 (AMNH); 1—Collection of L. B. Woodruff, Ac. 26824/Xanthonia villosula, 6/17/11, Bronxville NY (AMNH); 1—Cld. Spg. Harbor L.I., July 31-1900/Ac. 30429/6721 (AMNH); 1—Catskill Mts. NY/Charles Schaeffer Collection/HSBarber Bequest 1950 (USNM); 1—Fishkill NY, July 7 '16/ERKalmbach Collector (USNM); 1—Lott Wood, Flatbush L.I., J.L.Z., 7-18-90 (AMNH); 1—Lott Wood, Flatbush L.I., J.L.Z., 7-6-91 (AMNH); 3—Water Works, Flatbush L.I., J.L.Z., 10-VII-1893 (AMNH); 1—Water Works, Flatbush L.I., J.L.Z., 7-10-91 (AMNH); VanC Pk NY/Am. Mus. Nat. Hist. Dept. Invert. Zoo. No. 11744 (AMNH); 1—W Chestr Co NY, 8-8/GeoMGreene Collection/Specimen No. 230 (USNM); 1—West Point, N.Y., June 21, 1910, W. Robinson/Specimen No. 122 (USNM); 1—West Point, N.Y., June 22, 1912, W. Robinson (USNM); 1—Ithaca, N.Y., VII-10-1940, J. N. Belkin (USNM); 4—Alleghany Co., NC, VIII-7-1957, DM Weisman/Cumberland Knob Park (USNM); 1—Alleghany Co., NC, VII-24-1956, DM Weisman/Cumberland Knob Park (USNM); 2—Black Mts., N.C., VII/14 (AMNH); 3—Black Mts., N.C., VI/20 (AMNH); 1—Black Mts., N.C., VI/15 (AMNH); 2—Black Mts., N.C., VI/23 (AMNH); 3—Black Mts., N.C., VI/22 (AMNH); 2—Black Mts., N.C., VI/24 (AMNH); 1—Black Mts., N.C., VI/26 (AMNH); 1—Black Mt., N.C., VII-10-40, J. W. Green/J. W. Green Collection (CASC); 1—Valley of Black Mts., N.C., Aug. 16, 1906, W. Beutenmuller (AMNH); 1—Valley of Black Mts., N.C., June 20–30, 1906, W. Beutenmuller (AMNH); 1—Valley of Black Mts., N.C., June 20–23, 1906, W. Beutenmuller (AMNH); 1—77749/Davidson N.C., VI-1935, Tom Daggy (NCSU); 6—81234/Davidson N.C., July 17, 1977, blacklight trap, Tom Daggy (NCSU); 1—Graybeard Mt., N.C., VI/19 (AMNH); 1—Highlands, N.C./

David A. Young, June 5, 1957/on Hickory/Specimen No. 247 (USNM); 1—Hyde Co., NC, 01-15-1956, DM Weisman (USNM); 2—L. Toxaway, N.C./VI.22/Collection of Mrs. A. T. Slosson, Ac. 26226 (AMNH); 1—N. Carolina, Mt. Pisgah/David A. Young, July 15, 1957 (USNM); 1—Robbinsville, N.C./David A. Young, July 24, 1958 (USNM); 1—So. Pines N.C., 9-V-19/A. H. Manee Collector/Specimen No. 71 (USNM); 2—Southern Pines, N.C., VI-2, A. H. Manee (USNM); 3—Ohio (USNM). 2—Blue Ridge Summit Pa./J. A. Hyslop Collector/August 10, 115 (USNM); 3—Del. Water Gap/Collection of Mrs. A. T. Slosson, Ac. 26226 (AMNH); 2—DuPont Pa, Aug 14-16-44, H. L. Townes (USNM); 1—Glenside Pa, VI.17.06/GeoMGreene Collection (USNM); 6—Glenolden Pa, VI-16/GeoMGreene Collection (USNM); 1—Heckton Mills Pa., 8.VII.10/Coll. By P. R. Myers (USNM); 1—Lehigh Gap Pa, 7.13.1900/GeoMGreene Collection (USNM); 1—Lehigh Gap Pa, VIII.2.02/GeoMGreene Collection (USNM); 2—Lehigh Mt. Pa, V-30/Haimbach Collection (USNM); 1—Lehigh Mt., VI-30/Bethlehem/G. W. Coffrey Collector/GeoMGreene Collection (USNM); 1—Water Gap Pa/Ac. 5409 Coll Chas..alm (AMNH); 1—Watch Hill, R.I., July 11, 1909, W. Robinson (USNM); 1—Clemson College SC. 8 Jun 1931, J. G. Waters/4 (USNM); ♀/Bluemont Va, VI-28-1914/Ernest Shoemaker Collection (USNM); 1—♀/on walnut, Clifton Va, 5 Jul. 33, Bridwell (USNM); 1—12665t Hopk. U.S./H. B. Kirk Collector/Falls Church Va/Aug 14-14 (USNM); 1—12665i Hopk. U.S./H. B. Kirk Collector/Falls Church Va/July 18-14 (USNM); 1—12665i Hopk. U.S./H. B. Kirk Collector/Falls Church Va/July 16-14 (USNM); 1—Falls Church Va, VI.12.17/GeoMGreene Collection (USNM); 1—E. Falls Church Va., June 24, 17/INGabrielson Collector (USNM); 1—E. Falls Church Va., 4/VI/14/V. Roberts Coll. (USNM); 2—Glencarlyn Va, FKnab, 30-V-06 (USNM); 1—Glencarlyn Va, FKnab, 11-VI-11 (USNM); 1—Great Falls Va, 01.27.15/C. T. Greene Collector/GeoMGreene Collection (USNM); 11—Nelson Co., Va., June 19, 1914, W. Robinson (USNM); 1—Nelson Co., Va., June 27, 1915, W. Robinson (USNM); 1—Nelson Co., Va., July 4, 1915, W. Robinson (USNM); 1—Nelson Co., Va., July 13, 1912, W. Robinson (USNM); 1—Penington Gap Va, 11.7/Coll Hubbard and Schwarz (USNM); 1—Penington Gap Va/Coll Hubbard and Schwarz (USNM); 1—Rosslyn Va, 7.3/Coll Chittenden (USNM); 1—2500 ft. Alt., 8.4 mi. N. Thorton Gap, Va, 16.6.24, Allard (USNM); 1—Vienna Va, JCBridwell, July 8, 43 (USNM); 1—W. Sulphur W. Va., July 6, 1911, W. Robinson (USNM); 1—W. Sulphur W. Va., July 7, 1911, W. Robinson (USNM); 1—W. Sulphur W. Va., July 4, 1912, W. Robinson (USNM); 1—W. Sulphur W. Va., Aug 4, 1912, W. Robinson (USNM); 1—W. Sulphur W. Va., July 20, 1910, W. Robinson (USNM); 1—♀/Montreal Que, 29.VI.02/Fredl Knab Collector (USNM); 3—6722/Fred K Knab Collector (USNM); 2—S.I./Coll M. L. Linell (USNM); 1—Piney Br.? ?, 5-7-05/DHClemons Collector/collection F Knab/Specimens No. 258 (USNM); 16—Randolph Co., Mo., Sugar Creek Lake, Moberly, VI-14-80, Coll. E. G. Riley (EGRC); 1-1 M. E Moberly, Mo., Randolph Co., June 8, 72, E. G. Riley (EGRC); 10—Barry Co., Mo., Roaring River St. Pk., VI-8-9-1979, Coll. E. G. Riley (EGRC); 1—Missouri: Barry Co., Scenic Overlook on Sugar Camp rd., 3 mi. SE Roaring River St. Pk./Mercury vapor and blacklight, VII-3-1986, E. G. Riley (EGRC); 49—Gasconade Co., Mo., 1.7 mi S. Mt. Sterling, June 10, 78, Coll. E. G. Riley (EGRC); 4—USA: MO: Ray Co., Foxglove Nat. H.A., 10-VI-1994, coll. D. G. LeDoux (EGRC); 20—TEXAS: Bastrop Co., Bastrop St. Pk., V-10-1992, Coll. E. G. Riley/beating Quercus marylandica (EGRC); 4—TEX: Bastrop Co., Bastrop St. Pk., IV-19-90, Coll. E. G. Riley (EGRC); 3—USA: TEXAS, Travis Co.-Austin, Univ. Texas Brackenridge Field Lab, 550 ft./11 April 1996, S. L. Staines,

C. R. Nelson, T. C. Robbins (CLSC); 28—Austin, Tex, IV-9-24/J. O. Martin Collector (CASC); 9—Austin, Tex, XII-10-28/J. O. Martin Collector (CASC); 13—Austin, Tex, IV-3-24/J. O. Martin Collector (CASC); 8—TX, Travis Co., Austin, UT-BFL, IV-25-87, A. Hook/Bio. No. 7-87, A. Hook (USNM).

Description.—*Head:* Dark reddish brown, labrum and antenna yellowish brown; densely, coarsely punctate; with short, closely appressed golden setae; front with medial line obscure to not evident; interantennal area moderately concave to flat.

Pronotum: Dark reddish brown; densely, coarsely punctate; with fine, dense, recumbent golden setae; width averaging 1.5 times length; widest just behind middle; sides slightly angulate behind middle, slightly rounded and converging apically, strongly rounded behind; anterior transverse depression and lateral impressions moderately deep to shallow.

Elytra: Reddish brown; width averaging 1.5 times width, 2.9 times length of pronotum; basal callosity evident; punctures in regular rows, confused only near scutellum, behind sulcus, and below humeri; punctures nearly as wide as intervals on disc; intervals costate especially at sides and apex; pubescence composed of erect setae in single lines on intervals and very short, obscure, appressed setae in punctures.

Venter: Dark reddish brown; metasternum with sparse moderately coarse, shallow punctures at lateral margins; abdomen without coarse punctures, with sparse, fine punctures on last segment; all segments with lateral margins entire; last segment of male without large tubercles.

Legs: Femora with ventral tooth very small to absent. Male genitalia as in Figure 15a. Total length: 3.5 to 4.5 mm.

Etymology.—From *stria* (Latin) = line; for the regular rows of punctures on the elytra.

Notes.—Some specimens are yellowish brown with light reddish-brown head and pronotum. Others, especially toward the southern end of the range, are darker with head, pronotum, and venter fuscous, elytra dark reddish-brown, labrum, antennae, and legs reddish-brown. Some of the dark specimens have suffused darker areas at center or transversely across the pronotal disc and on each elytron at middle of base, on humerus, at middle of the elytral suture, and middle of the disc.

This species is similar to *angulata* but can be distinguished by the deeper apical emargination of the male genitalia.

Plant associations.—Specimens have been collected on *Carya, Juglans, Quercus rubra,* and *Q. marylandica* foliage.

Distribution.—CANADA: Quebec: Montreal. UNITED STATES: ALABAMA: Clay Co.: Pyziton. CONNECTICUT: New Haven Co.: New Haven. DISTRICT OF COLUMBIA: Brightwood; Rock Creek Park; 37 mi W. GEORGIA: ?: Yonah Mt.; Floyd Co.: Armuchee. KENTUCKY: Meade Co.: Fort Knox. MARYLAND: Anne Arundel Co.: Odenton; Baltimore; Frederick Co.: South Mountain; South Mountain near Myersville; Wolfsville; Montgomery Co.: Glen Echo; Great Falls; Prince George's Co.: Bladensburg; Washington Co.: Hagerstown. MASSACHUSETTS: Hampshire Co.: Mt. Tom; Plymouth Co.: Marion. MISSOURI: Barry Co.: Roaring River State Park; Gasconade Co.: Mt. Sterling; Randolph Co.: Moberly; Ray Co.: Foxglove Natural Heritage Area. NEW JERSEY: ?: Dundalk; Dundee Lake; Riv.; Sand Hills; Bergen Co.: Fort Lee; Ramsey; Cape May Co.: Avalon; Seal Isle City; Essex Co.: Montclair; Gloucester Co.: Collingswood; Malaga; Morris Co.: Boonton; Passaic Co.: Midvale; Oak Ridge; Warren Co.: Phillipsburg. NEW YORK: Long Island; ?: Agnedt LI; Catskill Mts.; Bronx Co.: Bronxville; Van Cortlandt Park; Cattaraugus Co.: Allegany State Park; Dutchess Co.: Fishkill; Kings Co.: Flatbush, L. I.; Nassau Co.: Cold Spring Harbor; Orange Co.: West Point; Rensselaer Co.: Alps; Tompkins Co.: Ithaca; West Chester Co. NORTH CAROLINA: ?: Graybeard Mt.;

Alleghany Co.: Cumberland Knob Park; Graham Co.: Robbinsville; Henderson Co.: Black Mts.; Valley of Black Mts; Mt. Pisgah; Hyde Co.; Macon Co.: Highlands; Mecklenberg Co.: Davidson; Moore Co.: Southern Pines; Transylvania Co.: Lake Toxaway. OHIO. PENNSYLVANIA: ?: DuPont; Glenside; Heckton Mills; Lehigh Gap; Lehigh Mt.; Delaware Co.: Glenolden; Franklin Co.: Blue Ridge Summit; Monroe Co.: Delaware Water Gap; Northampton Co.: Bethlehem; Lehigh Mt.; York Co.: Hanover. RHODE ISLAND: Washington Co.: Watch Hill. SOUTH CAROLINA: Pickens Co.: Clemson College. TEXAS: Bastrop Co.: Bastrop State Park; Travis Co.: Austin. VIRGINIA: ?: Clifton; Arlington Co.: Glencarlyn; Fairfax Co.: Falls Church; E. Falls Church; Great Falls; Rosslyn; Vienna; Lee Co.: Pennington Gap; Loudoun Co.: Bluemont; Nelson Co.; Prince William Co.: Clifton; Rappahannock Co.: 8.4 mi. N. Thornton Gap. WEST VIRGINIA: Greenbrier Co.: White Sulphur Springs.

Xanthonia villosula (Melsheimer)
(Figs. 11, 15b)

Eumolpus villosulus Melsheimer 1847: 169 [neotype ♂ (here designated): Lime Rid, Pa/Wickham Collection/NEOTYPE Xanthonia villosula (Melsheimer) des. C. L. Staines 1999 (USNM)].

Myochrous villosulus: Melsheimer 1853: 125.

Xanthonia villosula: Crotch 1873a: 96, 1873b: 34; Gemminger and Harold 1874: 3376; Hubbard and Schwarz 1878a: 640, 1878b: 660; Harrington 1884: 81; Lefèvre 1885: 74; Horn 1892: 200; Hamilton 1895: 340; Davis 1902: 37; Dury 1902: 165; Ulke 1902: 28; Fall and Cockerell 1907: 196; Blatchley 1910: 1142; Wickham 1911: 31; Clavareau 1914: 75; Andrews 1916: 100; Johnson 1916: 120; Chagnon 1917: 240; Leng 1920: 292; Wellhouse 1922: 1067; Blatchley 1924: 57; Hatch 1924: 582; Schaeffer 1928: 467; Douglass 1929: 57; Brimley 1938: 224; Johnson 1941: 11; Powell 1941: 158; Hughes 1944: 133; Löding 1945: 129; Fattig 1948: 19; Wilcox 1954: 401; Dillon and Dillon 1961: 680; Kirk 1970: 89; Rouse and Medvedev 1972: 79; Kirk and Balsbaugh 1975: 108; Wilcox 1975: 57; Riley and Enns 1979: 65; Wilcox 1979: 19; LeSage 1991: 309; Downie and Arnett 1996: 1333.

Myochrous plagiatus (Melsheimer). Melsheimer 1853: 125. *Nomen nudum.*

Description.—Head, pronotum, elytra, and venter usually reddish brown with yellowish brown labrum, antenna, and legs; some specimens are yellowish brown with reddish brown head and pronotum; others are darker reddish brown, venter fuscous with apex of abdomen lighter, each elytron with dark macula at middle of base, one on humerus, a linear dorsal one near suture, a row of three across disc and three across apical third, the discal and subapical maculae often fused; markings seldom distinct and more often completely absent.

Head: Densely, coarsely punctate; with short, golden, closely appressed pubescence; front with medial line slightly impressed, occasionally extending to vertex; interantennal area moderately concave.

Pronotum: Densely, coarsely punctate; with short, golden, recumbent pubescence; width averaging 1.25 times length; widest at middle; sides broadly rounded; anterior transverse depression moderately deep; lateral impressions moderately deep to obscure.

Elytra: Length averaging 1.5 times width, 2.7 times length of pronotum; basal callosity evident; punctures in regular rows, confused only near scutellum, behind sulcus, and below humerus; punctures as wide as width of elytral interval on disc; intervals costate, especially laterally and apically; pubescence composed of erect setae in single lines on intervals and very short, obscure, appressed setae at punctures.

Venter: Metasternum with moderately coarse punctures at lateral margins; abdomen with moderately coarse punctures, sparse to dense on both intercoxal lobe and last segment; last three segments with lateral margins finely serrate, occasionally segments three and four irregularly notched and 5 finely serrate; last segment of male without large tubercles.

Legs: Femora with ventral tooth very small to obsolete. Male genitalia as in Figure 15b. Total length: 2.8 to 3.5 mm.

Notes.—This species was originally described from Pennsylvania. The present interpretation is based on the original description. We were unable to locate the Melsheimer type in the Museum of Comparative Zoology (Perkins per. comm.) and presume it to be lost, a neotype from Pennsylvania is hereby designated (Article 75, ICZN 1999).

Myochrous plagiatus Melsheimer was not accompanied by a description of the species and is a *nomen nudum* (Article 12, ICZN 1999). Horn (1892) synonymized *plagiatus* with *villosula* and mentioned that he had seen Melsheimer's specimen. No specimens labeled *plagiatus* were found in the Melsheimer, LeConte or Horn collections (Perkins, pers. comm.)

This species is similar to *intermedia* but can be distinguished by the truncate lobes of the aedeagus and the finely serrate lateral margins of the last abdominal segment.

Specimens examined.—??: Cascade, 7.12.08 (CASC); Thatcher's Pinnacles, 5-V-57 (USNM). CANADA: ONTARIO: Marmora, 20-VIII-1951 (CNC); Toronto (USNM). QUEBEC: Lavoltrle, VI-14-19 (CNC); Montreal (CASC). YUKON: Dawson, June 13, 1917 (USNM). UNITED STATES: ARKANSAS: southwest (AMNH). Hempstead Co.: Hope, VI-11-32, VI-11-1954 (CASC). Polk Co.: Cove, 6-20-38 (SEMC). COLORADO: (USNM). CONNECTICUT: New Haven Co.: New Haven (CASC). DISTRICT OF COLUMBIA: 6-19-1909, VI-19-1911, June 30, 19, VI-30-1956, VI-16-1956, 13-9, VII-31-07 (USNM). ILLINOIS: (AMNH, USNM). ?: Chicago, May 30 '02 (USNM); Edgebrook, 7-18-15 (USNM); Glendon P'k, VI.28.03 (USNM). DuPage Co.: S. Maywood, VIII.9.03 (USNM). LaSalle Co.: VI-18-1938, VI-27-1938, VII-4-1938 (UAIC); Starved Rock State Park, VII 1940 (UAIC). INDIANA: ?: Miller, VI.29.12 (USNM). Floyd Co.: 6-27-03 (USNM). Tippecanoe Co.: VI.8.1955, VI.15.1955 (USNM). IOWA: Allamakee Co.: Waukon, VII-2-14 (USNM). Appanoose Co.: Centerville, VII-23-14 (USNM). Boone Co.: VII-32 (USNM), July 4, 32 (CASC). Dickinson Co.: Lake Okoboji, 7-15-16, VI-8-16, VII-22-16 (USNM). Dubuque Co.: Dubuque, VI-29-14 (USNM). Johnson Co.: Iowa City (CASC), IX-4-14, VI-23-98, IX-3-17, III-10 (USNM). Story Co.: Ames, 7-10-32 (USNM). KANSAS: Coffey Co.: June 19, 1923, 7-11-39 (SEMC). Doniphan Co.: Walthena, VIII.26, VIII.12 (USNM). Douglas Co.: 900 ft. (SEMC); Lawrence, 5-31-1929, June 24, 1919 (SEMC). Leavenworth Co.: 6-30-24 (USNM). Linn Co.: 1915, ele. 862 (SEMC). McPherson Co.: 5-28-23 (USNM). Pottawatomie Co.: Onaga, VI-16-09, VI-15-23, VI-10-09 (CASC), June 16, 1901 (USNM). Shawnee Co.: 6-13-23 (SEMC); Topeka (SEMC, USNM), Jun 18 (USNM). Wyandotte Co.: 6-23-24 (SEMC). KENTUCKY: Trigg Co.: Cadiz, June 30, 1939 (SEMC). MAINE: Penobscot Co.: Orono, 15 Sept. '13 (CASC). MARYLAND: Baltimore: VI-24-09, VI-26-09, VI-18-09 (CASC). Baltimore Co.: Sparrows Point, VII-9-31 (CASC). Frederick Co.: 5 mi. W. Thurmont, 16-VII-1971 (USNM). Montgomery Co.: VI-4-01, VI-25-1911 (USNM); Cabin John Bridge, 29-VII-14, July (USNM); Glen Echo, VI.28.30, VI.20.30, July 24, 1922, July 12, 1922 (USNM); Great Falls, VI.24.11, 12-7-05, VI-25-1911 (USNM); Jackon's Island, 23-V-13 (USNM); Plummers Island, 14-VI-09, 19-6-05, VIII.5.17, Jly 16, 13, 21-7-07, 20-VI-1912, 15-VII-06, VI.24.17, Jly 9, 1918, 27-6-05, June 11, 27-8-05, 10-6-06, 20-VI-1912, 13-5-05, 28-6-05, 4-VII-07, V-25-18, 26-VIII-01, 25.8.14, 16-VI-1912, 20.VI.1912, 13.8.14, 18.6.14, 15.6.02, Jly 24 '18, 25-8-04, 21-5-02, 26.6.15, 3.8, VII-

07 (USNM). Prince George's Co.: Beltsville, June 4, 14 (USNM). Washington Co.: Hancock, 9-1-16 (USNM). MASSACHUSETTS: Berkshire Co.: Mt. Tom, Aug. 17, 1902 (USNM). Hampshire Co.: Cummington, Aug 20, 1950 (USNM). Norfolk Co.: Dover (CASC). MISSISSIPPI: Adams Co.: Natchez, V.12.09 (USNM). Oktibbeha Co.: Starkville, Jn 20 (CASC). MISSOURI: (USNM); C. Mo. (USNM). Barry Co.: Roaring River State Park, VI-15-54 (CASC). Boone Co.: Columbia, Apr. 1907 (CASC). Motgomery Co.: Graham Cave State Park, July 6, 1973 (NCSU). St. Louis Co.: St. Louis, 28-V-39 (USNM). NEBRASKA: ?: Kereoslia (USNM). Otoe Co.: Nebraska City (USNM). NEW HAMPSHIRE: Belknap Co.: Barnstead, IX-6-28, IX-9-28 (CASC). NEW JERSEY: (USNM). Bergen Co.: Alpine, VII-25-10 (AMNH); Fort Lee, 25-VIII-1894 (AMNH). Morris Co.: Boonton, VI.23.01, VII.12.01 (USNM); Chester, VII.5 (AMNH); Mendham, July 24, 1916 (USNM). Gloucester Co.: Malaga, VII-3 (CASC). Ocean Co.: Lakehurst, X-12-14 (USNM). Passaic Co.: Oak Ridge, 6-19-1904 (USNM). Warren Co.: Phillipsburg, VII.19.14 (CASC). NEW YORK: (AMNH, USNM). ?: N. Evans, 5-14-10 (CASC); Long Island, 7-1-06, VII-10-1907 (SEMC, USNM). Chautauqua Co.: Dunkirk, 3.7 (USNM). Dutchess Co.: Fishkill, July 7 '16 (USNM). Erie Co.: Colden, 7-5-10 (CASC); East Aurora, 7-16-10 (CASC). Niagara Co.: Buffalo (USNM); Niagara Falls (CASC), 9-9-11 (CASC); Olcott, VII-4-18 (CASC). Onondaga Co.: Elbridge, 30.VI.1941 (USNM). Orange Co.: West Point, June 21, 1910 (USNM). Rensselaer Co.: Alps, VIII.14.09 (USNM). Tompkins Co.: Groton, VIII.12.1955 (USNM); Ithaca, 8/8, 6.15 (USNM). Ulster Co.: Olivera, VI-27-'15 (USNM). NORTH CAROLINA: Henderson Co.: Black Mts., VI-VII-1902 (CASC). Wake Co.: Raleigh, June 6, 1974, VI-25-1951 (USNM). OHIO: (USNM). OKLAHOMA: Atoka Co.: Atoka, 13.VI.1933 (USNM). Carter Co.: Ardmore, 6-1-09 (USNM). Le Flore Co.: 5-24-28 (SEMC). Pittsburg Co.: So. McAlester, Ind. T. (USNM). PENNSYLVANIA: (CASC, USNM). ?: Lehigh Gap, July 12.99 (CASC); Water Gap (AMNH). Bucks Co.: Perkasie, VI.18 (USNM). Columbia Co.: Lime Ridge (USNM). Delaware Co.: Glenolden, VI-16 (USNM). Wayne Co.: Starlight, VI-13-1921 (USNM). SOUTH CAROLINA: ?: Mt. Rest, 11 June 1941 (USNM). TENNESSEE: Hamilton Co.: Chattanooga, May 31 '56 (SEMC). Putnam Co.: Clarksville, 7-4-39 (SEMC). TEXAS: Rockwell Co.: Dallas, IV-26-07, 17 Apr. 07, V-18-07, V-19-07 (USNM). Travis Co.: Austin, XII-10-28, IV-3-24, IV-9-24 (CASC). VIRGINIA: (USNM). ?: Piney Run, VIII 1950 (USNM); Scott's Run, Aug. 2, 14 (USNM). Arlington Co.: Glencarlyn, V-30-1934 (USNM). Fairfax Co.: VI-17-1913 (USNM); Falls Church, 9.VI.1918 (USNM); Great Falls, VI-17-1920 (USNM); Mt. Vernon, VI-20-1929 (USNM), VII-6-18 (SEMC). Loudoun Co.: Bluemont, VI-28-1914 (USNM). Warren Co.: 5 mi N Linden, 3-VII-1971 (USNM). WEST VIRGINIA: Greenbreir Co.: White Sulphur Springs (CASC). WISCONSIN: Dane Co.: Madison, 8/12/27 (USNM). Grant Co.: VI-2-1949 (USNM). Juneau Co.: Sept. 2, 1949 (USNM). Racine Co.: Aug. 5, 1950 (USNM). Wood Co.: Lake Nepco, IX-13-1951 (USNM). Total: 530.

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